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EDITORIAL NOTES.

Confronted with so simple a thing as a wart, for instance, the thinking man stands appalled at his own tremendous ignorance. What is it? A proliferation of tissue. **OUR VAST IGNORANCE.** True, perhaps, but why and how? The eternal question; why? Cancer, likewise, is merely constructive cellular activity gone wrong; but why? And in our puny ignorance, because of it and to conceal it, we have invented the application of many terms and names which, if interpreted, simply mean "I do not know." "Idiopathic" is a delightful word; almost as pleasant to the ear as "neurosis;" and quite as meaningless. One should, therefore, have infinite charity for research and a very broad faith tempered only with sufficient scepticism to keep him from falling into too hasty belief. When, for example, the door is opened upon such vistas of speculation as have been presented by the work which will all be called to the mind's eye by the new word "opsonin," the thoughtful man is given much food for reflection. On the one hand he is in danger of falling into the abyss of too sanguine and enthusiastic acceptance of wonders to be soon accomplished; on the other he is in equal danger of stepping into the morass of utter denial and foolish scepticism. What will be the eventual value of the work of Wright and others developed from their "opsonic index," etc., no man can say. At present, however, the working out of the "index" is too trammelled with possible error to be regarded as in the slightest degree a scientific proceeding. But cer-

tain basic facts of greatest value are involved and they at once arrest attention. The living unit is fed by his blood stream, and fed and nourished either well or ill. Here is the starting point of Wright's work, and also the very recent work of Crile upon the cancer problem. Every portion of the individual being fed by his blood stream, necessarily such bacteria as are making him their habitat must also be so fed; and proliferative processes like cancer formation are likewise so nourished. Can the content of the blood or some of its remote and not understood characteristics be so modified as to desirably modify abnormal processes in the individual? That, to a certain extent this can be done, is well known and accepted fact. The question presents itself persistently, however: To what extent is it possible to carry this principle into practical and useful application in the treatment of disease? There was a time when all diseases were "blood diseases;" when "humors of the blood" were the cause of everything from blasted love to broken necks. There was later a time when to intimate that any affection might have its origin in the blood was to excite ridicule. But again the pendulum has swung and the blood is once more receiving the rapt attention of investigators, though as yet we may truthfully say that, relatively, we know nothing about it.

A committee of the A. M. A. has been appointed to collect, compile and compare the advertisements of physicians. In this state we wish to co-operate in the work, and to that end it is necessary that we receive the various publications throughout the state in which such advertisements appear. Will you, who read this note, give us your help by sending us the local papers of your community, marking the advertisements of physicians in order to facilitate the work? It is not much trouble to you and it will be of the greatest assistance to those having the work in charge. Please help.

Elsewhere we print a circular letter which went to all the members of the South Carolina Association, in their journal, and it is well worth your careful consideration. **A GOOD EXAMPLE.** Do not the same conditions apply to your own JOURNAL? There is no earthly reason why reputable manufacturers whose products we use should not support your own JOURNAL if they do any advertising at all. And most of these manufacturers do advertise in the privately-owned journals of the various states. Why do they advertise in these journals and not in the state journals? Every state association journal has a larger bonafide circulation within its state than has any privately-owned journal. It can not therefore be the lack of circulation which influences the advertiser. What is it? Can it be that the manufacturers do not care to aid in making permanent the state journals? Can it be that they would

rather support the journals whose reading pages, as well as whose advertising pages, they can buy? Can it be that they have some hope that through lack of support the state journals will not live and the present movement for reform will stop? Why not reciprocity? If we support a manufacturing house, why not insist that that house support your JOURNAL? It places its advertisement in journals which are fighting against our campaign for honesty in *materia medica*; why not place it in your own JOURNAL which is fighting for honesty? Every honest manufacturer who is really dealing in good faith with the medical profession, and who advertises at all, should support the journals representing the profession by advertising in them; if he does not, but rather chooses to advertise in the published-for-profit medical (?) journals, what is the reason? There is something very peculiar about this; should we not try to find out what it is?

The New York Academy of Medicine announces that the Edward N. Gibbs Memorial Prize, of \$1,000 will be awarded on October 1st, 1909, to the author of the best essay on the subject of "The Etiology, Pathology and Treatment of the Diseases of the Kidney." All essays must be presented before the date given. New discovery or fruitful research will be considered the standard of merit, and each one of the three divisions of the subject may be treated at as much length as the author sees fit, but an essay, in order to obtain the prize, must show originality. If no essay of sufficient merit is received, the Academy reserves the right to make no award. Essays should be sent to the Committee of the New York Academy of Medicine on The Edward N. Gibbs Memorial Prize, from which committee full details may be had upon request.

It is a great thing, from the business man's standpoint, to have conventions meet in his city; it is entirely immaterial what sort of folk convent so long as they do convent. The stranger within the gates must live and therefore he must spend money. Q. E. D. It is a matter of course that the commercial bodies and city officials of a convention city make every effort to secure all the conventions they possibly can, and to issue invitations galore and write letters full of guff and soft soap. But that is no reason why the mayor of such a city should at one and the same time write himself an ass and extend a gratuitous insult to the educated and thinking people of his community. Los Angeles is trying to get the National osteopathic organization to meet there in 1909, and of course the usual number of invitations have been issued. One of these comes from Mr. A. C. Harper, mayor, and an extract from it, as it appears in the *Cosmopolitan Osteopath* for May-June, is as follows:

"We offer you the friendly environment, not only of the state having the largest number of

osteopathic physicians in the world, but we offer you the city having the largest number of osteopathic physicians of any city in the world; which means that population which gives the largest recognition to and patronage of osteopathy.

"To carry the thought further, it means a city of 300,000 population, all of whose eight daily newspapers give friendly and sympathetic news service of osteopathic procedure. Indeed, no newspaper in America has made that systematic and long continued and exhaustive campaign for the advancement of rational therapeutics that has been made by Dr. Harry Brooke, editor of the 'Care of the Body Department' of the *Sunday Times Magazine*."

The Los Angeles Times stands now, and has stood for many years, opposed to everything scientific, everything pertaining to rational medicine and medical science. Harry Brooke is not a "Dr." and never was. He is of the long-haired "Otis, Mex." variety of freak and weekly fills sundry columns of the Times with the most awful slush and drivel, relic of the superstition and the ignorance of the middle ages, samples of a cerebration which any alienist would find little difficulty in classifying. And of this sort of thing is the mayor of Los Angeles proud! Truly, it was not without reason that Los Angeles became known, some years ago, as the "Mecca of the quack."

Many and various, and coming down from the ages are the maxims, proverbs, sayings, what you will, that attempt to put into a few words what is an inexorable law of nature in the sifting process of retributive justice.

OLD SAWS. "The mills of the Gods grind slowly but they grind exceeding fine;" "honesty is the best policy;" "truth, crushed to earth, will rise again," etc., etc., *ad nauseam*. Yet the fact is so seldom appreciated. Whatsoever a man may do, if he is honest with himself first, last and all the time, and if he goes through the world doing that thing which he knows is the right thing for him to do; playing the game honestly according to the rules; giving every man a square deal and not lifting his hand to injure another, just so surely, and no matter what others may say or do nor how much criticism or calumny may be his portion, just so surely will he eventually come into his own and receive that reward which no money can buy. It may not come to him in the shape of riches or place or fame; when the last word is said and forgotten, these are but trifling piffle. It may not even be recognition during his lifetime; but it will surely be that inward satisfaction of having done the right thing, of having fought the good fight, of having played the square, clean game, of having lived to some purpose, which brings lasting contentment and "the peace of God which passeth all understanding." The other fellow may cheat, or be crooked or do those things "which no gentleman will do" and gain riches or temporary place. It

may even seem that no man has found him out or that he has lost nothing of the respect of his fellows; yet he hates and despises himself and, soon or late, he or his name sinks to the level which belongs to his type. Retributive justice sometimes seems to halt, to limp, to crawl, even to pause for long; but the certainty of it is fascinating. "Time is the essence of all things," and time is nature's tither; slow, sure, safe, inexorable. Live so that "you may look any man in the eye and tell him to go to hell," may sound a bit harsh in sensitive ears; but it is mighty true and mighty good philosophy, and if you do, you need not worry about the other fellow; nature and time will tend to his case.

A number of instances of outbreaks of smallpox having their origin in some case of varioloid, mistakenly diagnosed as chickenpox, have come to our attention. Repeatedly has the

VARICELLA OR VARIOLOID.

JOURNAL urged the significant danger in the steady increase of smallpox in this State; again must the warning be uttered. Give the most minute attention to every case of apparent varicella and preferably notify the health authorities at once, so that the most careful examination may be made and the possibility of establishing a focus of variola infection eliminated. To ignore the slightest precaution in these cases is to play dangerously with fire; and to light up an epidemic of smallpox in this twentieth century, would be a lasting disgrace to our profession. There is a great deal of varioloid or mild smallpox in the state and it is very easily, and not infrequently, mistaken for varicella; occasionally with disastrous results to many people. Let us err rather on the side of too much caution than too little.

A pharmacist in Los Angeles recently wrote a letter to a physician in that community commenting wisely upon a prescription written by the said physician which had come to his drug store to be filled.

THE HARM WE WORK.

Why do not more pharmacists write to the physicians whose prescriptions they fill, calling attention to the injury done the pharmacist by the careless use of proprietary preparations? It is only through enlightenment that physicians can learn the harm they are working through their ignorance of actual facts and existing conditions, and the pharmacist can give this information more easily, more surely and more frequently than can any other. We very gladly print Mr. Fulton's letter and we trust that he and other pharmacists will continue this good work. It is a shame that members of our profession have been so hoodwinked by the skillful lies of the manufacturers of proprietary mixtures that they have been led into doing so great harm to the profession of pharmacy. It is not merely the monetary hardship which we work upon the pharmacist—though that is bad enough—but we sink him to the level of the merely mechanical paster

of labels or wrapper of packages of "ready-to-wear" medicines. We have a board of pharmacy working to raise the standard of pharmacists; we have a medical profession working to sink the pharmacist to the level of the mechanical shop clerk who but hands out ready-made packages. Letters of just this sort will be of the greatest value, for they call the attention of the individual physician to some one specific case, and in time they will have their effect.

And now comes the newest of our states—Oklahoma—bearing gifts and olive branches in its hands

FAMILY ADDITION.

and presents to the family of state medical organization journals our youngest born. With June is issued Volume 1 Number 1 of the *Journal of the Oklahoma State Medical Association*. We regret to note that it contains the advertisement of glycothymoline, a preparation which was given two years to set itself right before the Council on Pharmacy and Chemistry—and did not attempt to do so. Such preparations are intended for general public consumption and self-doping, and the medical profession is merely used in the first instance to introduce the stuff and exploit it at the cost of the lay public. If you doubt the truth of this, just go to the nearest drug store and ask to see an *original package* of the preparation in question. Do not content yourself with merely looking at the label on the sample package which the manufacturer will gladly send you, but consult the label on the original trade package. You will there learn things that will doubtless surprise you; a most extensive list of diseases will there be found, and of course glycothymoline will cure them all. Oklahoma, go back and begin right. Cut out the unholy alliance between our profession and the lies and frauds of the nostrum man. Depend upon the Council on Pharmacy and Chemistry which, please remember, is the only institution in the world to which the medical man can go asking for the truth about *materia medica* preparations, and be sure of getting it. Don't believe anything that any manufacturer tells you, unless the Council says that the manufacturer is telling the truth. There is not one of them that has not, deliberately or inadvertently (and that is giving them the benefit of the doubt) lied to our profession and misstated either the composition of some of its wares or their active value. You cannot depend upon your own judgment, for you do not know enough to judge; you cannot depend upon the statements of the manufacturers, for they are all interested in but one thing—selling goods; and they have all told us—what was not the truth. The transmutation of metals is child's play in comparison with the wonderful changes which the manufacturer can produce in the action of well known drugs and chemicals, merely by means of a lie on the label. Do not let the published-for-profit medical (?) journals fool you into thinking that there is anything back of this movement except a desire to get the truth—the real, plain, ordinary, simple garden truth.

ON THE RELATION OF ANTICYCLONIC WEATHER TO THE PREVALENCE OF LA GRIPPE AND PNEUMONIA ON THE NORTHERN HEMISPHERE WITH SPECIAL REFERENCE TO RECENT EPIDEMICS OF PNEUMONIA IN CHICAGO AND SAN FRANCISCO.*

By C. M. RICHTER, M. D., San Francisco.

The report of the pneumonia commission of New York,¹ issued end of 1905, contains the words: "Our studies have thrown no light whatever upon the conditions, which determine the onset of lobar pneumonia in apparently healthy persons. Moreover, we have been unable to draw conclusions as to the presence of pneumococci in the lungs during life, or as to the channels by which they gain access thereto." The United States Census report of 1900 says: "The very fact of an increasing mortality from pneumonia in late years, when general hygienic conditions have steadily improved, would disprove the efficiency of such a course of prophylaxis."

Juergens² in a résumé of the latest research work on pneumonia refers to the attempts made most recently to discover a positive difference between the pneumococcus of a healthy mouth and that of the pneumonia mouth and asserts the absolute failure to establish a specific character for the pneumococcus of pneumonia.

Where there is still so much darkness I hope you may pardon me for drawing your attention to certain conditions of the atmosphere, which accompany pneumonia epidemics over the entire northern hemisphere, and where San Francisco seems to give the key to knowledge.

Osler³ says that "cold" has been for years regarded as an important etiological factor, but that in fact there is very little difference in various state groups of the United States.

Musser and Norris⁴ referring to meteorological influences, say that "owing to the complexity of the problem, an exact scientific solution of it is still unattained." They add: "Most writers have attributed a predisposing potency to change of temperature."

During the last meeting of the American Medical Association at San Francisco, June 5-8, 1894, I read a paper⁵ on the influence of atmospheric pressure on the prevalence of pneumonia. I maintained then, that excessively high air pressure appears coincident with epidemics of pneumonia in the northern hemisphere and exhibited charts demonstrating this fact for a number of cities. That paper had been made possible by a study of the different climatic regions of California in their relation to morbidity and mortality from pneumonia.

As so-called "cold weather diseases" were prevalent in California, but the cold weather missing, I charted all the different meteorological factors and the pneumonia mortality figures together for a number of years for the different climatic regions of

California, and could thereby establish the fact, that, at least everywhere in California, in the Sierra as well as near the sea coast, there was absolutely no relation between temperature and humidity and such mortality, but clearly so between periods of high air pressure and such mortality.

One may consider San Francisco as the city par excellence to make a research in regard to the influence of weather on disease.

There is hardly any other large city to be found on the northern hemisphere with as little difference between the mean temperature and mean relative humidity of January and July.

NORMAL AIR PRESSURE.						
	Jan.	Feb.	Mar.	Apr.	May	June
Chic.	30.09	30.07	30.02	29.99	29.96	29.95
S. F.	30.11	30.10	30.06	30.05	29.99	29.95
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chic.	29.98	29.99	30.04	30.04	30.06	30.08
S. F.	29.95	29.93	29.94	30.01	30.08	30.12
NORMAL TEMPERATURE.						
	Jan.	Feb.	Mar.	Apr.	May	June
Chic.	23.4	26.8	34.1	45.6	56.1	66.7
S. F.	50.1	51.7	53.6	54.6	56.6	58.4
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chic.	72.0	70.9	68.2	62.0	52.0	38.4
S. F.	58.3	58.7	60.4	59.3	56.3	51.4
NORMAL RELATIVE HUMIDITY.						
	Jan.	Feb.	Mar.	Apr.	May	June
Chic.	81	81	75	71	70	72
S. F.	79	77	78	78	78	79
	July	Aug.	Sept.	Oct.	Nov.	Dec.
Chic.	67	68	69	69	77	79
S. F.	83	85	80	79	75	81

Extreme winter and summer temperatures and extreme cloudiness may justly be eliminated in San Francisco. The lowest temperature in Chicago is—23, in San Francisco 29, a difference of 52 degrees. On the other hand, San Francisco could easily take the laurels from Chicago as "the windy city, in summer time." In San Francisco ocean winds are prevailing during 9 months of the year. Of course it gets ocean sand with them, which we call sometimes an abominable dust. The prevailing wind of Chicago is S. W. but during five months it is N. E., coming from the lakes. San Francisco has not been a densely populated city, like Chicago, and enjoys a rather pure ocean atmosphere, very different from the air inhaled in Chicago, New York, London, Paris or Berlin.

It is the presence of the Pacific Ocean and the westerly direction of the winds that insures high winter and cooler summer temperatures for San Francisco. Even Chicago's winter temperatures are somewhat ameliorated by the large area of fresh water near it.

San Francisco has an average of 69 rainy days in the year and Chicago has 126. The percentage of possible sunshine is 57% for Chicago and 63% for San Francisco.

It will impress you deeply, when you study this second chart before you, giving the even temperature and humidity line for San Francisco for every day of the 11 years 1888 to 1899, in contrast to the lines of pneumonia mortality and air pressure.

These facts prompted me to make and to put before you a study of the pneumonia epidemics of Chicago and San Francisco for the 5 years 1899 to 1904, in their relation principally to air pressure.

* Read before the San Francisco County Medical Society, March, 1908.

Meteorological observations and figures take the place of experiments, where periodical changes in the atmosphere and their effect on climate are to be investigated. Such research work should be more encouraged.

A fundamental difference between low and high air pressure, that is between cyclones and anticyclones, lies in the fact that during the cyclone the lower air, the ground air, the air that had been with us since the last anticyclone, is ascending into the upper atmosphere, whilst during an anticyclone the reverse takes place; the air is coming down from the higher levels of the atmosphere.

The anticyclone is represented by a gyration of air that enters at the top and flows out at the bottom. The air is descending almost vertically in the center and shows an outward flow everywhere in the circumference of the anticyclone. The distance of the center of an anticyclone from that of a cyclone is generally about 2000 miles in the United States and often more than that in Europe. It is not so very seldom that the entire area of the United States is covered by an anticyclone.

The cyclones travel at the rate of 20 to 60 miles an hour, the anticyclones show a similar speed, which is, in fact, the speed of our railroad trains and which is the speed with which la grippe epidemics are said to travel.

Suppose that an anticyclone has its center at half distance between Chicago and San Francisco, then it is clear that some of its center air may travel at this rate 1000 miles towards San Francisco and some of it 1000 miles towards Chicago. It is at present assumed that the so-called "wandering" cyclones are rather shallow, extending only about 2-3 miles upward. They are not supposed to feed the anticyclones with their air, as the anticyclones extend higher up.

The continuous procession of such areas of low and high air pressure from a westerly to an easterly direction in our latitudes furnish the rainstorms and the fine weather periods during the so-called cold season.

The anticyclones sometimes stop their wandering tendency. Such anticyclones seem to have a dynamic, not a thermic origin, like the rest of them. They represent a blocking of the higher and lower atmosphere and it seems that cyclones in their neighborhood have no effect whatever on their gigantic mass of air, that may cover the area of the United States, or of Europe and Asia together. Such anomalous anticyclones bring generally much higher pressure than their wandering cousins and they last longer.

Without doubt they bring an atmosphere to our lungs quite different in quality from the one coming out of a shallow high. I may say right here that periods of increased activity in the sun bear a certain relation to the appearance of such increase of air pressure on our globe. The sun is practically the sole source of the energy which maintains the movements of the Earth's atmosphere. It is the center of a continuous outflow of radiant energy, some of which is appropriated by the earth.

This outflow is more or less modified by certain periods of the sun's activity.

One of our greatest living meteorologists* has said only recently that "the problem of weather periods and their connection and dependence on the activity of the sun is one of the grandest and most beautiful problems of modern meteorology."

The highest levels of our atmosphere are more directly affected by this energy than the lower levels, and thus we have to qualify the air that flows down to us during a period of a stationary anticyclone, according to the special conditions of the sun that may have affected it. For instance, ozone is formed in the highest atmosphere consequent to the absorption of ultraviolet rays and you all know the irritating effect it may have on mucous membranes.

Then again, since radium became known to us, we became acquainted with radioactivity which is considered now a universal property of our atmosphere. A constant ionization is going on in our atmosphere, due to the radioactivity of our earth and to the work of sunrays. Radioactive influences seem to be derived principally from the pores of the earth.

Physicists, in following up this matter, found that during cyclones this radioactive influence becomes exceedingly marked in our atmosphere. The ascending air sucks the emanation out of the soil. In consequence negative electricity predominates in our atmosphere.

During an anticyclone the rising of such radioactive emanation seems more or less prevented by the increase of air pressure over the capillaries of the earth. In consequence positive electricity prevails. As we have no special sense for electricity, nor for air pressure and its variations, we do not become aware of the tremendous differences that exist in the air we breathe during different weather conditions. In general, it may be said that during a cyclone, at least during the beginning of one, the air is filled with all the impurities that possibly can be lifted and carried upward from the ground. During an anticyclone the atmosphere coming to us should represent the purest air possible, an air possessing all qualification that the sun's energy may impart. The higher the air pressure, the higher probably is the origin of such air and the more specific is such quality.

How can such relatively pure air be of detriment to our lungs? Has change of air pressure in itself any possible effect on our system? A London physician, Dr. R. Mead, wrote in 1746:⁶ "The whole body, in the heaviest air (30.8 inches) sustains a weight of about 33.684 pounds; in the lightest (28 inches) of 30.622 pounds, 5 ounces. Whence the difference of pressure at different times is 3.062 pounds. True it is that the internal air of the human body makes a resistance to that weight, but yet such change of pressure must necessarily have considerable effects. Such effects must of necessity be most visible in weak bodies and morbid consti-

* I. Hann.

tutions, when other circumstances concur to their taking place, while strong bodies and sound constitutions are little affected by them."

In regard to the effect of electricity on our body, Prof. J. Loeb⁷ says, that "nature had so safeguarded the electric conditions, and especially the equilibrium of electric forces within the body, that any disturbance of this by external electric force is utterly impossible. We are so constantly placed on varying electric conditions because of alterations in the electricity in the earth and the air, that if this were not the case animal life would be in almost constant danger from the magnetic storms that are so frequent."

But is it true that we are so safeguarded? Was the London physician nearer the truth in 1746, when he had his doubt about weak bodies? Is the terrific morbidity and mortality from pneumonia not perhaps a proof of an insufficient safeguarding?

Dr. W. T. Howard of Cleveland⁸ had 35% pneumonia in 550 autopsies. 6% were due to primary and 29% to secondary pneumonia. He says that 50% of his autopsies on typhoid fever subjects showed pneumonia.

Any reflex action on the mucosa of the air passages may cause a hyperæmia, or such molecular changes in it, that a secondary infection may become established.⁹ Whether air pressure or ozonization, or a specific ionization may cause such reflex actions, we do not know. Whether other potencies of the higher atmosphere may influence our health, we do not know.

However, these charts may demonstrate to you that during a prevalence of anticyclonic weather and especially inside the area of a stationary anticyclone pneumonia and probably la grippe are generally prevailing and sometimes become epidemic.

That temperature, sunshine and humidity are in no relation to the prevalence of pneumonia I tried to prove to you by the San Francisco chart. During the entire period of 11 years from Aug. 1, 1888 to May 2, 1899 there are only 2 great epidemics of pneumonia in San Francisco and they are representing at the same time the only two periods of excessively high air pressure that have been registered during those years.

About 340 deaths from pneumonia occurred during the continuous 9 weeks ending March 11, 1890, and about 380 deaths during the continuous 9 weeks ending Jan. 26, 1892. Not before 1890, nor after that year until summer 1904—my records go to 1904—has the mortality from pneumonia again reached such figures for any continuous 9 weeks in San Francisco.

Of course we may call la grippe responsible, but then we have to blame excessive air pressure periods for the prevalence of both diseases.

The increasing population of San Francisco, therefore, can not be blamed for an increase of the mortality from pneumonia. It seemed wise just for this reason, to compare two cities like Chicago and San Francisco in regard to their pneumonia mortality and their air pressure conditions. You

are confronted on this chart with a highly interesting problem of pneumonia epidemics.

To make the comparison as direct as possible I gave on this chart the mortality figure of San Francisco five times higher than the actual one, as Chicago's population was just about five times higher than San Francisco's during that period. You see without difficulty that there are real epidemics of pneumonia in almost every year in either city, that they are not synchronous, that they are quite different in the figure of mortality in the different years and that these figures are not increasing from year to year, that Chicago's mortality comes to a very low ebb every summer, except 1903, that San Francisco has a reduced but still considerable mortality from pneumonia every summer, especially 1903, and that all these epidemics of Chicago and San Francisco are keeping most accurate pace with the increase and decrease of air pressure, as registered in these cities. If we select nine continuous weeks as a time unit of the lowest and highest mortality in either city for the five years, we find the following figures to represent mortality and air pressure:

1. Lowest mortality from pneumonia.				
Days with air pressure of:				
	30.2 and above.	29.9 and below.	29.9-30.2	
Chicago, 9 continuous weeks... Summer, 1900.	2 days	11 days	64 days	
Mortality, 18.3 per week.				
San Francisco, 9 continuous weeks Summer, 1901.	none	18 days	59 days	
Mortality, 38.2 per week.				
2. Highest mortality from pneumonia.				
Chicago, 9 continuous weeks... Spring, 1904.	31 days	16 days	30 days	
Mortality, 148.8 per week.				
San Francisco, 9 continuous weeks Winter, 1900-01.	24 days	13 days	40 days	
Mortality, 137.1 per week.				

In this comparison I have included the air pressure figures for the 2 weeks preceding the continuous 9 weeks of lowest and highest mortality from pneumonia during the 5 years. We have, therefore, the air pressure figures for 77 days and the mortality figures for 63 days. It is obvious that this should be done and it is doubtful whether the air pressure figures should stop 2 weeks before the end of the continuous 9 weeks of mortality.

These examples make it quite clear that it is not the cyclonic, but the anticyclonic weather that is in correlation to these epidemics. Chicago had a mortality of over 19,000 during the 5 years (256 weeks) and San Francisco of over 20,000 (1328 cases more). Of course only 1-5 of this mortality gives the actual figure for San Francisco. During the cold period of the year Chicago had an average mortality of 104 per week and San Francisco 100 per week. During the warm period Chicago had 44 per week and San Francisco 58 per week.

Undoubtedly the effect of a high pressure area may become mitigated or entirely offset by an area of very low pressure following it closely and extending over a longer period. The cyclone would remove the air brought by the anticyclone.

Only the closest study of these charts will give an adequate idea of the difficulty, to prove a correlation numerically.

To the meteorologist it is clear that such air pressure figures are only makeshifts in trying to prove a period. It is impossible to prove by them just where the anticyclone gives way to the cyclone, or when the air in its quality is changing from that of the upper to that of the lower atmosphere. It is impossible to give the proper numerical expression to the value of an anticyclone in contrast to the one of a cyclone. Naturally the two areas merge imperceptibly into one another.¹⁰ But the proposition before us is, in future to prove the character of an anticyclone by the character and the quality of its air and not only by figures of air pressure. And this is the point where research work of the medical physicist could set in.

My work necessarily has been on empirical lines, but it carries us logically to the assumption that there must be something noxious in the air that comes to us during high air pressure periods, a noxiousness that is in direct relation to pneumonia and la grippe.

The proposition before us demands, it seems, to search and to examine critically the air we breathe during different air pressure conditions, less with reference to its temperature, moisture, motion and more as to the quality that is imparted by the radiant energy of the sun, by radioactivity, ozonization or whatever physical quality there may be.

Any investigation of this nature should not be contented to prove a reciprocal relation of certain weather conditions and pneumonia and la grippe as existing in a city or on a small part of our globe, but should endeavor to prove such relation for at least one hemisphere. The southern hemisphere would necessarily show corresponding conditions.

This is exactly what I emphasized in my paper of 1894 when I pointed to the fact that the limits of high air pressure over the northern hemisphere are at the same time the limits of the prevalence of pneumonia. At that time I exhibited charts, demonstrating this fact, for Berlin, Munich, New York, Cincinnati and San Francisco, covering many years, for instance, 10 years for Berlin and 22 years for San Francisco. Likewise, I charted this correlation for St. Petersburg, London, Paris, Naples, New Orleans, Denver and Salt Lake City but, unfortunately, our great fire did away with all these charts.

Periods of excessively high air pressure appear during certain years and certain months on different parts of our hemisphere. In some years European cities will experience this condition as well as cities of the United States almost during the same month—sometimes only one continent will exhibit this feature.¹¹

But epidemics of pneumonia or la grippe are always developing in consequence. The two greatest epidemics of la grippe that existed in Europe during the last century were the two of 1833-4 and 1889-90 and the entire 19th century had the

highest air pressure recorded just during those two winters.¹²

I would like to close these remarks with the words of the great clinician Ziemssen who, alluding to epidemics of la grippe and pneumonia wrote many years ago: "After all we can not but assume that there must be general conditions, perhaps multiplied by local circumstances, which appear and disappear simultaneously in great expanse of space. Of what nature these influences may be, is perfectly dark. We would not be forced to think of miasm or contagion. We are more led to believe, that fluctuations of other conditions, extending over great areas of the surface of our globe at the same time, furnish an analogy."

Conclusions.

Pneumonia is not merely concomitant to the cold weather season.

Its prevalence depends on anticyclonic weather, summer and winter, on the northern hemisphere, and not on low temperature.

There is sufficient reason to assume that the quality of the air of an anticyclone changes in conformity with changes in the activity of the sun and that the prevalence of la grippe and pneumonia is subject to a specific quality of such air.

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2. Juergens, Medizinische Klinik No. 10, 1907.
3. The Principles and Practice of Medicine, by W. Osler, 1906.
4. Modern Medicine, by W. Osler, 1907, Vol. 3.
5. Influence of Atmospheric Pressure on the Prevalence of Pneumonia, by C. M. Richter, M. D. The Journal of the American Medical Association, Vol. XXIII, 1894.
6. A Treatise Concerning the Influence of the Sun and Moon Upon Human Bodies, and the Diseases Thereby Produced, by R. Mead, F. R. C. P., London, 1746.
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8. The Frequency and Etiology of Acute, non-Tuberculous Pneumonia in a General Hospital, by W. T. Howard; American Medicine, Oct. 28, 1905.
9. Erkaltung und Abhartung. A. Strasser Die Deutsche Klinik. Band 1, 1903.
10. Climatology of the United States, by A. J. Henry, 1906.
11. Lehrbuch der Meteorologie von Dr. Julius Hann, 2 Aufl., 1906.
12. Sonnenflecken, Erdmagnetismus und Luftdruck von Dr. C. M. Richter Meteorologische Zeitschrift. Band 19, 1902.

Discussion.

Prof. McAdie: Dr. Richter has asked me to criticize his paper as severely as possible from the standpoint of the climatologist. Unfortunately I am not able to do that because I know that most of the data has been gathered with thorough painstaking accuracy, and that there has been no straining of the facts; and that in all of his statements concerning pressure, temperature, humidity and sunshine he has records to verify them. The weak point in the argument is that the curves are integrated curves, whereas we need the component curves of "susceptibility." If the character of the air is the predisposing factor we ought to have in our curves not the total death rate but should know more of the number of cases contracted and the recoveries. So, with the pressure curve, it is almost impossible to determine from an integrated curve the individual component curves desired. As Dr. Richter says, in regard to the difficulties of his paper, it is almost beyond the power of a meteorologist to give a proper characteristic pressure con-

dition; for we have all kinds of pressure conditions. We may have a high pressure with everything favorable, upon this supposition, for the development of pneumonia and right in the middle of it the opposing condition will occur. How can you correlate such conditions? From the standpoint of the climatologist I think that too much importance may be given to climate. It is a double-barreled proposition. You have climate and you have man. You must remember that one man will get pneumonia because of imprudent exposure and the other man, properly housed and cared for, will not have pneumonia. There you have climate control. In Chicago you may have the same climate, the same pressure say, yet the houses may be warm, and a man stepping out of his house may walk in slushy streets, or get into an environment favorable for pneumonia. I wish to pay tribute to the work Dr. Richter has done. This is in many ways a memorable paper. It opens up a wide field of investigation. He traces a relationship between pneumonia mortality and high pressure conditions that seems to be more than an accidental relation. He has done the work with great detail and with great labor, trying to trace the relationship between the demonstrated high air pressure condition and the prevalence of pneumonia. Dr. Richter has done a great deal of thoughtful and honest work and has opened up an important line of investigation for the medico-climatologist.

Dr. Richter (closing): This chart, exhibiting epidemics in Chicago and San Francisco during 5 years, I thought would interest you, first, because we practitioners have been taught that pneumonia is a disease, more or less under the influence of low temperature, that it spreads itself generally over the cold season of the year and that it is an infectious disease, which calls for a certain prophylaxis in regard to sputum. On this chart you find that, although pneumonia is more prevalent during the cold season, it appears in the form of epidemics of different magnitude in the different years, seasons and cities, and is entirely independent of low temperature, as the conditions in San Francisco exemplify. Secondly, we learn from this chart that these epidemics are a function of the prevalence of anticyclonic weather and I tried to lay all possible stress on the proposition to look for an explanation not in the mechanical pressure of the atmosphere, but in possible qualities of the air, as carried to us during an anticyclone from the higher levels. Such air should be supposed to be qualified by the radiant energy of the sun and to a different degree during the different periods of the sun's activity.

REVIEW OF RECENT WORK ON TUBERCULOSIS.*

By LEWIS SAYRE MACE, M. D., San Francisco.

The purpose of this paper is briefly to report some of the most important articles, which have appeared during the past year upon the subject of tuberculosis. No attempt has been made to report them

all for that would clearly be impossible, but a resume of the work which has been done along the lines of etiology and diagnosis should serve to show the trend of modern experimental research in the field and to point the way to a better understanding of modern treatment.

Under the heading of etiology the statement of Koch, made before the London International Congress of 1901, that the human species was not subject to infection by the bacillus causing bovine tuberculosis takes first place in importance and interest. To settle this question a royal commission was appointed consisting of Sir Michael Foster, Woodhead, Martin, McFadyen and Boyce, whose second interim report (1) published in February, 1907, gives the results of their labors to this time. While their work is not by any means completed, it is evident from this report that their experiments are being made in the most thorough and scientific manner, and it is already quite apparent at what conclusion they will eventually arrive.

Their experiments with bovine tubercle bacilli were performed upon guinea pigs, dogs, cats, rabbits, goats, apes, baboons and monkeys, and the organism was found to be fatal to all these animals as well as to the bovine species and to act upon them in the main with neither more nor less virulence.

The human bacilli worked with fall into three groups. Group I resembles the bovine type in cultural characteristics and virulence upon the animals mentioned. They grow with difficulty upon artificial media as the bacilli of the bovine group do. After an injection of equal doses the animals used develop rapidly fatal general tuberculosis equally with those infected with the bacilli of the bovine group. In other words, Group I is the bovine bacillus and nothing else.

Group II are far less virulent to animals in the doses used than those of Group I. They grow easily upon artificial media. In comparatively large doses a rapidly fatal general tuberculosis does not follow in dogs, cats, guinea pigs, etc., while, on the other hand, when monkeys, apes and baboons are used a comparatively small dose is followed by rapidly fatal effect. The important fact is thus shown that their virulence increases as the animals used approach the human type.

Group III is intermediate in virulence between Group I and Group II. It lies between the two in cultural characteristics, and it is generally unstable and variable in its virulence.

In conclusion, the committee say: "Of the sixty cases of the human tubercle bacilli studied by us fourteen belong to Group I, that is to say, contained the tubercle bacilli of the bovine type. Of these sixty cases twenty-eight possessed clinical histories indicating that in them the bacillus was introduced through the alimentary canal. Of these, thirteen belonged to Group I. Of the nine cases in which cervical glands were studied by us 3, and of the nineteen cases in which lesions of abdominal tuberculosis were studied by us, 10 belonged to Group I. These figures indicate that a large per cent of tuberculosis contracted by ingestion is due to the bovine

* Read before the Cooper College Science Club, March, 1908.

bacillus. A very considerable amount of disease and loss of life must be attributed to the use of cows' milk containing tubercle bacilli, and such milk ought never to be used as food. Our results clearly point to the necessity of measures more stringent than those at present enforced being taken to prevent the sale or consumption of such milk."

The question whether heredity or contact infection is the more important factor in human tuberculosis is well discussed by Hazen (2) of Johns Hopkins. At the Phipps Dispensary, he says, they believe heredity to play a minor role. For this paper eighty-three families were studied containing five hundred and thirty-four individuals, of whom two hundred and fifty-four were tuberculous, thirteen suspicious, and two hundred and sixty-seven well. These figures alone speak for contact infection. Sixty-two of the patients were free from hereditary taint, and his careful analysis of the statistics at hand certainly speak for the importance of contact infection. Of forty-eight individuals exposed by marriage, twenty-one have contracted the disease and two are suspicious. Where the husband or wife had tuberculosis the other developed it in 43% of the cases. In fifteen instances, one or both parents suffer from tuberculosis and the children are free. And the most striking fact of all is that out of two hundred and fifty-four patients, only three who were not in contact, developed the disease.

All of this would tend to show that more or less intimate contact with the tubercular is a prime factor in the dissemination of the disease and that any hereditary taint can be ignored. Nevertheless, the fact so long observed clinically that children of tuberculous ancestry in many cases show lack of resistance to the disease cannot be denied. Although some writers go so far as to refuse to acknowledge the possibility of any hereditary tendency to tuberculosis, the fact that it does exist cannot be seriously questioned. In this connection, the work of Vaughn and Wheeler (3) on the production of anaphylaxis or hypersusceptibility to albumen injections should be mentioned in that their experiments showed that this specific hypersusceptibility was transmitted through the mother to her offspring. And certainly if anaphylaxis, which is a condition in which the cell body has developed to a high degree the power of elaborating a proteid splitting enzyme like body, is transmissible to offspring, it should hardly be a cause for doubt that the susceptibility to tuberculosis should be transmissible also.

To make this point clearer I should speak further of this condition of anaphylaxis or hypersusceptibility. The authors quoted have been working upon the separation of a poison group in the proteid molecule of egg-white. Following the previous work of Rosenau and Andersen⁶ they established a condition of anaphylaxis against this proteid to prove that their separation of poison group and nonpoison residue was an actual one. One injection of egg-white they found to be without effect, while a second likewise was ineffective if made within a few days after the first. If ten or

twelve days, however, were allowed to elapse, the second injection caused poison symptoms consisting of: 1st. Evidences of peripheral irritation, violent scratching, etc.; 2d. Paralysis, especially of the hind legs; and, 3d, Violent clonic convulsions and death from respiratory failure. This corresponds to what has long been known to occur while using guinea pigs for standardizing diphtheria antitoxin. These animals would often die suddenly without known cause following subsequent injections of horse serum upon whom the first had had no effect. Vaughn and Wheeler explain this as due to a condition of hypersusceptibility developed in the following way: The first injection of proteid is slowly split up as the body cells are unprepared with the binding group or enzyme-like body in any large quantity. The toxiphore or poison group is therefore released but slowly, and is eliminated without doing harm. In the process, however, the cells have acquired the ability to elaborate the binding group or receptor group in large quantity, and a second dose of proteid is rapidly split up and the poison group is liberated, causing its symptoms depending upon the dose used. The fact that this condition of anaphylaxis is transmitted by the mother to offspring should be considered before denying the possibility of the inheritance of susceptibility or loss of resistance to tubercular infection.

Some very valuable work has been done along lines suggested by Von Behring's theory that practically all tuberculosis is intestinal in origin and transmitted in infancy by means of cows' milk or swallowed particles of dust and dirt. The fact that tubercle bacilli may gain admission to the lymph stream through the intestinal walls without infecting them in transit or losing their virulence is well established. Schlossman and Engle⁴ injected an emulsion of tubercle bacilli into the stomach of guinea pigs after laparotomy. The experiment was carried out with great care and attention to detail to prevent the accidental infection of the blood during the operation. A few hours after the operation the bacilli were constantly found in the lungs, having gained admission to the mesenteric lymph vessels, thence to the thoracic duct and from this to the right heart and lungs. In the same line with these researches is the experimental anthracosis after the theory of Calmette that this disease is always of intestinal origin. Van Steenburg and Sommerville⁵ adhere to their previous statement that it is possible for coal dust to traverse the wall of the intestine and reach the bronchial glands and even the lungs themselves. Corroborating these experiments is the work of Petit⁷ and Vallee⁸ and others, and while many workers do not agree and are unwilling to believe that the lungs can be infected by tubercle bacilli through the blood in the manner stated, still it must be confessed that the evidence at hand seems to show that it is possible and more than probable that in a vast majority of cases tuberculosis has its origin in ingested rather than inhaled infectious material. This should be taken as an added proof if any were needed that all tuber-

culous milk should be excluded from the infants' dietary.

The recent work on the early diagnosis of tuberculosis may well be introduced by consideration of the paper by Hamman and Wolman⁹ of Johns Hopkins, since it deals principally with physical diagnosis and tends to show that entire attention of late has not been devoted to serum reactions. The question "How marked must the signs be in order to pronounce a suspect to be a tubercular" is answered by the consideration of one hundred and fifty early cases received at the Phipps Dispensary, all of which were proved subsequently to be tubercular by the finding of tubercle bacilli or a positive tuberculin reaction or the subsequent development of the case. All showed one or all of the three cardinal signs, alteration of the percussion note, modified breath sounds and rales. Where these three signs occur together, no matter how slightly marked one or another may be, the case is unhesitatingly pronounced tuberculous. In sixty-one patients of this group the three signs did not occur together and hence the physical diagnosis alone was not sufficient for diagnosis.

In 29, or 47%, change in percussion note was present. Rales were present in 53% and modified breath sounds in 61%. Modified breath sounds is therefore the most frequent early sign. Where only one sign of the three was present rales was slightly in the lead. In 2-3 of the group two signs were present; they were, percussion note and rales 16%. Breath sounds and rales in 23% and percussion note and breath sounds in 25%. Alteration of breath sounds being decidedly in the lead.

In 60% of these cases the respiratory rate was above 20 per minute; and 42% of these complained of loss of weight, half of these knowing of no disturbance of digestion or appetite to account for this loss. On account of these being ambulatory patients no temperature record was obtainable, otherwise the number of positive diagnoses from signs and symptoms might have been much larger.

It is interesting to note that 60% of the early cases were diagnosed from physical examination alone, leaving but 40% in which further evidence was necessary for positive diagnosis.

In considering the diagnostic and therapeutic uses of tuberculin as affected by recent researches it seems important to review some of the investigations into the cause of the tuberculin reaction and recent progress into the study of tuberculin immunity, especially so since these studies have already resulted in the better understanding of the use of tuberculin as a remedy and have led to a wide appreciation of its value.

On the injection into the circulation of a foreign proteid, such as horse serum, egg-white or bacterial bodies, certain profound changes occur in the body cells as a result of which they acquire the ability to split up rapidly a succeeding dose of the same proteid. This is the reaction of anaphylaxis, which plays a most important part in the production of active immunity. In the case of the subject infected with tuberculosis the cells have already been

rendered hypersensitive by the action of the invading organism, and the injection of tuberculin is therefore followed by the rapid splitting of this substance into its poison and non-poison groups. Binding of the toxophore group by the sensitized cells occurs, followed by the typical reaction. In the nontuberculous, on the other hand, where this condition of anaphylaxis does not exist, the cells, lacking the necessary binding group, can produce it but slowly. Consequently, the poison is liberated slowly and eliminated rapidly without causing the poison symptoms, which constitute the tuberculin reaction. It is therefore necessary to bear these facts in mind and to give as small doses as possible, repeated no oftener than necessary to give the characteristic reaction. Roth-Schultz¹¹ prefers to begin with .5 mg. doses increasing slowly to 2.5 mg. Roepke¹² advocates rapidly advancing to 5 mg. doses, which is half the maximum dose of Koch. This rapid increase of dosage appears the more rational method since we should remember that anaphylaxis may be induced by small doses of tuberculin, provided sufficient time is allowed to elapse between injections.

Wasserman¹³ and his pupils have carried the investigations still further, and have elaborated an interesting theory of the cause of the tuberculin reaction. According to Wasserman, the condition of hypersensitiveness is the first stage in the production of active immunity. That is to say, the cells in proximity to the tuberculous lesion are well supplied with amboceptor groups. These seize upon and bind the invading proteid by means of one affinity, and by means of the other bind the complement constantly present in the serum. This latter body, by means of its ferment action, acts upon the cells, causing the softening and disintegrating of these tissues accompanied by the general symptoms of fever, etc. However this may be, and the ferment action of bound complement may well be questioned, his results are important since they demonstrate that the antibody to tuberculin, in other words, anti-tuberculin or amboceptor group, is formed by the cells under the influence of tuberculin treatment and can be demonstrated in the serum with more or less regularity.

The method Wasserman has used to prove the presence of this antibody is that known as fixation of complement, which is briefly as follows: The serum of an animal is rendered immune to the red blood cells of another species. In this manner, one obtains a serum, which, by means of its amboceptor group, will unite with these red cells on one hand, and on the other will unite with and bind the complement necessary for the hæmolysis. The amboceptor is not rendered inactive by heat while the complement is thermolabile; thus it is easy to differentiate one from the other and to show the presence of the immune body.

Thus: If to a serum of a tubercular subject containing tuberculin antibodies a suspension of tubercle bacilli is added presumably will follow a union of bacilli, amboceptor and complement. Now, if to this mixture is added an inactivated im-

mune serum plus an emulsion of the foreign red blood cells, no haemolysis will follow since the complement necessary has been found by the tuberculin antibody. But if the specific antibody were not present in the suspected serum the complement would not of course be bound, and upon the addition of the haemolytic system haemolysis would follow.

The results of these investigations show very conclusively that as a rule no free antibody is present in the serum of tuberculous subjects, but that it can be found fairly regularly in the serum of such patients when treated with tuberculin for a sufficient length of time.

Citron¹⁴, in an exhaustive article on the causes of the tuberculin reaction, differs somewhat from Wasserman in that in common with Weil and others he questions the ability of bound complement to exert its digestive action.

In following the results of tuberculin therapy over long intervals of time he concludes that the reaction of anaphylaxis is the precursor of the active immunity induced by this method. He divides the course into four stages: First, increase of fixed cell receptors corresponding to the stage of hypersensitivity. Second, increase of fixed cell receptors and beginning stage of free antibodies in the blood. Third, great numbers of fixed cell receptors and diminution of free antibodies. Fourth, after long continued injection of tuberculin, anti-tuberculin is found in the blood, together with great numbers of fixed cell receptors and free antibodies at point of local infection.

The practical application of this is as follows: To produce active immunity in tuberculosis, tuberculin must be injected over a long period of time beginning with very small doses, 1/1000 mg. old tuberculin or 1/10,000 mg. T. R., according to Trudeau¹⁵, and increasing gradually to many thousand times the original dose, taking great care in the meantime to watch for the minor symptoms of headache, nausea, temperature rise, etc., which, though insignificant in themselves, may show that the limit of toleration has been reached and that the dose must be reduced or omitted until it shall be safe to begin again the gradually increasing doses.

Discussion.

Dr. Hirschfelder: One of the most interesting facts in this paper was the resume of the report of the British Commission on Tuberculosis. I think they established the doctrine that Koch promulgated that bovine tuberculosis and human tuberculosis were distinct, and disproved his statement that bovine tuberculosis does not invade human beings. Koch appropriated the work of Theobald Smith without giving him credit for the pioneer work that he had done in differentiating the two bacilli so thoroughly. The Germans are divided into two sections, and followers of Koch still maintain that bovine tuberculosis does not occur in human beings while the larger group believe with the British commission. All of the cases in human beings are not due to the bovine, nor has it been clearly proven as yet that the human germ is a modified bovine. It is not impossible that the tuberculosis germ was originally the grass germ. It is not impossible that originally the cow became infected with a grass bacillus, and in passing through the cow the germ became modified and became adapted to life in the cow. The cow germ, in passing through the milk into the intestinal tract of the child or adult, produces that form of tuberculosis which the commission claims belongs to Class 1, which answers to the tests of the bovine tuberculosis. Gradually, during its numerous passages through the cow it may change to the form of the Class 3, and finally, in successive passages through the human body, may become the germ which is called the human germ. This is not at all impossible. However, I think it is very important that the report of this work of the British commission should be spread, and I think that the fear that the people will be too much frightened should hardly keep back this report any longer. I think the danger is that they will not be enough frightened.

WHEN IS GONORRHEA CURED?*

By JOHN C. SPENCER, M. D., San Francisco.

It is a simple answer, to the question, "When is gonorrhea cured?" to say offhand, "When the gonococci have disappeared from, or are no longer demonstrable in the patient's secretions."

Upon this bald statement, however, depends a responsibility that is second to none in the entire realm of medicine; one that calls for the highest degree of patient and painstaking perseverance and diagnostic technic. So much depends on our dictum in the pronouncement of a final cure of this social curse, that the responsibility almost appalls.

If the proper education of the lay-public as to the seriousness of gonorrhea is to be brought about, it must surely be by the physician. Our moral weight is doubled by virtue of our dual position of father-confessor and medical adviser. Thus a judicious elucidation as to the nature and pathologic possibilities of gonorrhea, may be used to fit each individual's mental capacity, and emphasized from time to time.

The widespread fallacy among the ignorant, that the cessation of the urethral discharge means the termination of the disease, should be vigorously negated.

Relatively it is this very complacency as to the disappearance of only the more striking of the objective symptoms, which is responsible for the

* Read at the Thirty-eighth annual meeting of the State Society, Coronado, April, 1908.

1. Second Interim report of the Royal Commission of Human and Animal Tuberculosis. British Medical Journal, Feb. 9, 1907.

2. Home Factor in Tuberculosis. Hazen. Johns Hopkins Hospital. Bulletin Aug., 1907, p. 298.

3. Effect of Eggwhite and Its Split Product on Animals. Journal of Infectious Diseases, June 15, 1907, p. 476. Vaughn and Wheeler.

4. Zur Frage der Entstehung der Lungen Tuberculose. Schlossman and Engel. Deutsch. Med. Woch., 1906, Nr. 27.

5. Van Steenburg and Sommerville. Press Medicale, 1906, No. 24.

6. Rosenau and Andersen. Bull. Hyg. Lab., No. 23.

7. Pettit. Press Medicale, 1906, No. 32.

8. Vallee-Comp-rend-de l' Acad. des Sci., T. 142, No. 20.

9. Hamman and Wolman. Johns Hop. Hosp. Bull., Aug., 1907.

10. O. Ball Wein Klin. Woch., XVIII, No. 37.

11. Roth-Schultz. Beitrag z. Klin der Tuberkulose, 1906, VI, 167.

12. Zeitschr. f. Tuberculose, March, 1907 (Roepke).

13. Wasserman and Bruck. Deutsch Med. Woch., 22 March, 1906, No. 12.

14. Citron. Berlin Klin. Woch., 1907, No. 36.

15. Trudeau. American Journal Med. Sci., June, 1907.

failure to cure gonorrhea. The superficiality of some colleagues admits of such inaccuracy, as the attempt to treat a patient with a urethral discharge following impure coitus, without that most essential aid, the microscope. As well attempt to navigate a vessel upon the open sea without a mariner's compass. Such methods reduce medical science to the level of mere guesswork, in which the lay-opinion is of equal importance with that of the medical man.

Let us assume then, that the diagnosis of gonorrhea has been established by the examination of a smear of pus from the male urethral meatus; or from the female urethra by gentle stripping per vaginam; or from Skene's glands; or from the orifices of the ducts of Bartholin's glands; or from the canal of the cervix uteri. In searching for unusual sources of re-infection, it should not be forgotten that some men have para-urethral follicles which open on the lip of the external meatus, 1-2 mm. from the edge. Secretion from these may be so scanty as to be overlooked. On careful search, such aberrant glands may be found and the secretion expressed will show gonococci. These may be a ready source of re-infection of the urethra.

It seems almost superfluous to remark in passing, that the pus should be collected either on a sterile platinum loop or a small cotton swab, and not by attempting to get the smear by direct application of the glass. In the female this latter is practically impossible. In the male, the meatus is apt to be smeared with pus which swarms with saprophytic bacteria. These tend to confuse the findings somewhat. Gentle vertical pressure of the meatus between the thumb and forefinger will usually bring a fairly copious fresh drop of pus into view. The sample should be from this. A great saving of time and fragile glassware may be accomplished by making these smears directly onto a clean glass slide. Fix by the usual quick triple dash through the flame; dry, and drop the immersion-oil directly onto the specimen.

The well-known coffee-bean shaped, intracellular diplococci are usually so abundant in urethral pus as to offer no difficulty in finding them. In the cervix uteri it may be necessary to use a blunt curette very gently on the cervical mucosa if gonococci are not readily found at first. Secretions from the prostate and seminal-vesicles obtained by massage with the cot-covered finger in the rectum, because leukocytes may be scanty in them, should be centrifuged if possible. The sediment thus obtained avoids much of the concomitant mucus.

The stain used may be a solution of any one of the basic aniline dyes. For further security, the so-called Gram method of staining may be resorted to. The only absolute diagnostic criterion is the culture on blood-agar or serum-agar. For the latter purpose the glands should be most carefully cleaned with liquid soap and a cotton pledget. Then a careful gentle irrigation of the first two cm of the urethra should follow, in order to remove saprophytes as far as possible, which could confuse the growth. The specimen should be collected from

secretions stripped from the deeper parts of the anterior urethra. After 24 hours in the incubator at body-temperature, the characteristic minute glistening colonies of gonococci will be evident.

Secretions should be examined at intervals of a few days microscopically by way of control. As time passes, the discharge, no longer spontaneous, must be obtained by stripping the urethra from the bulb forward secundum artem, collecting the drop at the meatus. Failing in this, we must resort to the expedient of having the patient urinate into a conical glass and by deft aspiration of the floating shreds into a pipette, transfer them to a slide and so stain.

It is well to bear in mind that immediately or shortly after an injection or irrigation, there is liable to be a decided increase of the muco-pus discharge, hence the gonococci on the surface are either swept away, or may be more or less morphologically altered, due to the action of the drug used. For the latter reason disturbing artefacts or precipitants may be formed, interfering with the ready recognition of the gonococci. Hence the search should be made preferably at a time remote from treatment.

As time passes, the urine will clear and the shreds will greatly diminish in size, shape and number. If from the anterior urethra, they will tend to assume long stringy shapes due to the large admixture of mucus. Ultzmann used to say, that this shape was characteristic of the location of the process in the anterior urethra, and that the rather small crumbly, comma-shaped floccules were characteristic of the location of the lesion in the deep urethra and prostate. This is true in a measure but not an absolute criterion. Long familiarity, coupled with more or less sharply marked clinical signs, enables the average urologist to draw certain corroborative conclusions from the appearance of the various shreds seen microscopically in the urine. Both gross and minute appearances have been described and discussed in an elaborate article by Saxe, published in the *N. Y. Medical Journal* of March 2nd, 1907.

This declining period of the disease requires the exercise of our wisest judgment and care in expressing an opinion as to cure.

With the subsidence of the subjective symptoms, the patient is apt to chafe at restraint and wants to resume his former mode of life. The classic test of former days, was a night spent in *venere et baccho*. If no increase in the discharge ensued, and there were no subjective symptoms in the urethra, a cure was assumed. This plan is happily a relic and is seldom or never resorted to in these enlightened days.

It not infrequently happens that what seemed an ordinary gonorrhea confined to the anterior urethra, has, unobtrusively and with few or no symptoms, extended into the prostate and seminal vesicles. Many authorities assume *eo ipso*, that a duration of the disease of six weeks or longer is followed by its extension to the prostate or seminal vesicles.

These are the cases which show clear urine upon the two or three glass test, yet have apparently inexplicable relapses. As these relapses become less frequent or cease, the medical attendant, lulled into a sense of false security, may be tempted to raise the embargo and permit the patient to resume his former mode of life or to marry. These are the supposedly clean cases responsible for binding many an unfortunate bride to a gynecologist's office and more than often placing her upon the operating-table the subject of an abdominal operation.

It must not be forgotten that all secretions in front of the compressor urethræ muscle find their exit through the external meatus. All such back of this muscle, find their way backward into the bladder. Preliminary search should be made through the endoscopic tube for possible individual infected glands or follicles. Any droplet of mucus appearing in their mouths should be aspirated through a long capillary aspirator, transferred to a slide and stained. Should this procedure be negative, then a $\frac{1}{2}$ to 1% solution of silver nitrate in the urethra may be used to set up a degree of irritation sufficient to cause gonococci in the deeper inter-epithelial spaces to be swept up to the surface and so out to the meatus. If this result negatively, then a thorough stripping of the prostate and seminal vesicles by the cot-covered finger in the rectum must be resorted to. The fluid thus obtained should, if possible, be centrifuged. This sediment should be very thinly and evenly spread on a slide, since the relatively large amount of mucus present tends to take up too much of the stain, making it rather difficult to distinguish the gonococci. Since there is a scanty number of puss-cells usually present in these secretions, and since but few of them in the chronic conditions, may contain gonococci, unless the fluid be centrifuged, the probability of finding the organism is proportionately reduced. Cowper's gland must also not be overlooked. Its secretion may best be obtained by pressure in the perineum between the anterior limit of the tuber ischii and the deeper part of the urethra.

If gonococci are not discoverable in shreds obtained at the meatus, or from the urine; or through the endoscope; or from the prostatic fluid or semen; if the patient's urine be wholly clear to the naked eye, although the centrifuged urine show a few puss-cells; if the resumption of the patient's ordinary mode of life, including the ingestion of urethral irritants, such as alcohol and certain foodstuffs; if upon careful search, all these factors yield a negative result, then the patient may be advised to indulge in coitus condomatus, the contents of the condom being reserved for critical examination. The violence of the orgasm may serve to bring to light gonococci from the prostate or vesicles.

If all these possible foci of infection are explored diligently, and no gonococci are found the patient may be pronounced non-infectious.

It is not to be denied, that some patients may continue to show one or two shreds in the urine without other clinical symptoms even when, by various tests, we are certain that they are no longer

contagious. It is also not to be denied, that in some patients we are never able to successfully get rid of this one last shred. Clinically, it appears to be without pathologic significance, hence it may be disregarded.

WHEN IS GONORRHEA CURED?*

By G. SHERMAN PETERKIN, M. D., Seattle, Wash.

As Nine-Tenths of All Physicians, by Their Acts, Demonstrate That They Consider Themselves Competent to Pronounce When Gonorrhea Is Cured, and the Laity Believes Every Physician Is Competent, What Attitude Should the Genito-Urinary Specialists Assume Toward the General Practitioners on This Question?

Why should this question be put?

Briefly,—1. Gonorrhea is a dangerous disease.

2. It is very prevalent.

3. It is detrimental to the welfare and progress of the individual and State.

As proof of the above statements and premises for argument, I shall reiterate trite statistics.

80% of all operations upon women for diseases of the ovaries and womb are due to gonorrhea.

20% of all natal blindness.

80% of all men in large cities have this disease at one time or another.

45% infect their wives.

45% of all involuntary childless marriages due to same disease.

And this disease, gonorrhea, is a preventable disease. Prevention here has one synonym, "education." Education of mankind in the laws of sex. Carried to a successful termination, results are to be accomplished through every human being's observing the laws of morality. The end sought is idealistic; when attained, admittedly, it will be the millennium. Nevertheless, it is the rate of pursuit of the ideal that advances the rate of evolution. It is action governed by the correct interpretation of the principles of natural laws that leads ultimately to success and it is a universal law that the advancement of mankind is in proportion to the degree of education, i. e., knowledge and compliance with the principles of natural laws; therefore, it stands to reason that as possessors of the original source whence this knowledge to educate must come, that we, physicians, must pursue the ideal; though the material results are not apparent; but,—necessity makes the practical the problem of today, and demonstrates the primary step to be taken in this direction,—the performance of our first duty, which is to the present generation.

To the genito-urinary specialists, figures designate the practical problem,—80% of avoidable operations, 20% of avoidable natal blindness, etc. In words, had a suitable test for cure been applied to the males infected, the above percentages would, unquestionably, have been smaller. This is a fact

* Read at the Thirty-eighth annual meeting of the State Society, Coronado, April, 1908.

reasoning logically. Obviously, as the percentages relate only to the cure of disease, it is a problem that duty demands the medical profession to solve.

There are in the states of California, Oregon and Washington, in round numbers, 3,000,000 people; practising physicians, 6500; genito-urinary specialists, 30. Of this population, estimated by the U. S. Census Bureau ratio, there are 1,536,000 males. Eighty per cent, or 1,228,800, will have gonorrhea at one time or another. There are 30 specialists whose work is not wholly limited to gonorrhea. On an average, these specialists will not see, reckoning on the basis of a month's time, more than 30 new cases. Multiply this by 30, we have 900 cases seen a month by specialists. If, say, one-half of the male population who are liable to gonorrhea, (614,400) have gonorrhea during this one month and the specialists see only 900, who is to care for the remaining 613,500 cases? The remaining 6345 general practitioners (125 deducted as eye and ear specialists, as they probably do not treat this disease). Of these 6375 physicians, in the three states, the specialists can and perhaps try to apply a thorough test for cure. The remaining 6345 physicians, because of imaginary difficulties of technique, lack of facilities or knowledge, do not even make the attempt. So! if there are 30 specialists and 614,400 gonorrheics, it stands to reason, the specialists can and do see only an infinitely small percentage, the vast majority being cared for by the 6345 general practitioners and druggists. The general practitioners neglect, because of the aforesaid reasons, applying a thorough test for cure, so the percentages are still 80% of preventable operations, 20% of natal blindness, etc.

Briefly recapitulating:—

1. The spread of gonorrhea can be lessened by inaugurating a test for cure that the general practitioner can use.
2. The inauguration of said test is a problem for the medical profession, not the laity.
3. It is absolutely impossible for the g. u. specialists because of limited number, and extent of the disease, to come in contact with even 95% of the gonorrheics.
4. The greatest amount of experience, knowledge of this disease and means of providing tests, etc., are possessed by the g. u. specialists.

What conclusions are to be drawn? One, and that,—it is "up to" the g. u. specialists to educate the general practitioner who has not the time, facilities or opportunities.

Can tests be simplified and rendered competent? Yes. But the first step toward this end is to remove the mystical and sophistical veil of higher erudition with which the specialist surrounds himself, his work, or both; that mankind may come to worship only at his individual shrine, because Divine Providence (?) as his worshipers have had mysteriously impressed upon them has endowed that particular apostle of Aesculapius, with superior wisdom or intellect that is beyond the ken of other mortal students of medicine, when in reality, the

practice of medicine is a question of application and intellect as are all other vocations.

Perhaps I am ambiguous, but the general practitioner who desires information as to a test for cure and seeks the same realizes the significance of the foregoing paragraph.

The information may be received, if so, it is a dissertation bristling with scientific technicalities, demanding facilities that he does not possess and cannot possibly afford; yet offering no alternative for the same; but,—there is the postscript, elaborating upon the innumerable difficulties of application by the inexperienced. The general practitioner can but feel its application impractical or liable to result only in failure or perhaps, still hopeful, he writes others, asking references whereby he can obtain the facilities required or such information that he may formulate a test himself. In return, there is a kindly reference to "my test in my text book," where many details are omitted, or another scientific article filled with different terms for the same thing and special technicalities which are just a little different from anyone's else, but essential to the successful application of aforesaid test. The result? The general practitioner believes all tests impractical, and becomes an obstacle to progress by his enforced inactivity.

Practically, it is that we place ourselves on a pedestal, as willing to supply a luxury,—superior, unattainable, knowledge, instead of the necessity—true knowledge which is simplicity.

The general practitioner does not, nor is he permitted to realize the fact that incongruity of methods is but different means to the same end, which do not nor never can change the general principles underlying the laws governing the life of the gonococcus, and the anatomy and physiology of the genito-urinary tract.

Yet, it is not only the employment of different means to the end, but the empiricism found in the ever ready explanation of physicians', "I do so and so" or "do so and so, because Dr. Kackiac, noted, does so and so," without demanding, stating or seeking the underlying principles and premises from which conclusions are drawn; or more explicitly, it is the routine application of memory to individual organic life, instead of the reasoning faculties, that retards advancement through perpetuating means or methods instead of principles.

Rome may be reached by land, water or air; by direct air-line, designated roads or little known by-paths. The means of conveyance may be fitted with luxuries, or contain bare necessities; be it steam, electricity, horse or afoot; but,—Rome will be Rome, when every traveler arrives. So it is with the test for cure, the various means aim at one and the same object,—the location of the gonococcus. The means of obtaining that end may vary, as those that lead to Rome. In selecting the means, the logical physician and educator does not overlook the natural law which permits to the few the luxuries of life,—in this instance, the more advanced knowledge as to cure, as culture test,

etc., and limits the vast majority of mankind to the necessity, microscopical observation.

Reasoning thus, I shall, in a general way, outline a course, which if pursued, I believe, will undoubtedly obtain the results sought, the lessening of gonorrhea, by elucidating and demonstrating the general principles which underlie and govern the technic of all tests, and cause them to be generally applied.

What end is sought in a competent test for cure? The conclusive demonstration of the absence of gonococcus in the genito-urinary apparatus of the individual. If this be all, why the difficulty of examination?

Reasons, three:—

1. Size of the germ.
2. Topography of the country which it inhabits.
3. Its habit of burrowing underneath the surface.

Knowing this, proceed by ascertaining the topography of the country, where and how the germ burrows. That is, devise means by which the germ can be located and obtained.

The principles governing the means, three (3) in number:—

1. Press the germ out of his hiding place into the urethra.
2. Dig him out from beneath the surface, i. e.—the epithelium cells.
3. Give him such food that he will multiply in sufficient numbers so as to be more readily detected.

These general principles govern every examination; they are simple and any one knowing the above, can develop or apply a method which is efficient, especially can he so do, when furnished with the knowledge of the various means to this end.

To illustrate, take a diagrammatic sketch of the topography of the genito-urinary tract. It is a canal. Going from the meatus to the bladder, leading into it, are numerous openings to the glands of Littre and lacunæ of Morgagni. Next in order, are the openings into Cowper's glands; then comes the antiquated barrier, in the light of modern knowledge, the sphincter urethræ that serves only to keep the discharge from gravitating backward, but not the *germs*, which burrow underneath its margins. In this portion of the canal, posterior to this barrier, are the 16 to 20 openings of the prostatic ducts, likewise the ejaculatory, that lead into the seminal vesicles. At these organs, our interest in the topography ends, for from the commencing of the vas deferens, at the seminal vesicles, to the termination of the testes, we have no means of obtaining the germs therein hidden, and we must depend upon nature to cut off or destroy, as she does in the ovarian tubes. In all these localities, the germs may hide and burrow beneath the surface, either in the canal proper, or in its byways.

First, we will consider the canal proper, the urethra. Its diameter varies, as does its dilatability, from 22 French in its narrowest portion to 45, or

even greater in the widest. Its surface is infolded. Moreover, the openings into it are innumerable minute openings of the glands and lacunæ before mentioned. In these tracts, the gonococcus hides and in the recesses formed by its infolding, or caused by induration or strictures.

How is the germ to be pressed out?

1. Stripping the urethra.
2. Voiding urine, meatus compressed,—thus are the folds obliterated and the gonococcus washed from between them and from behind induration, etc.
3. Dilating the canal with a Kollman dilator, which empties the urethral gland by compressing it at right angles and its efficiency lies in its varying shapes and the ability to stretch the canal beyond its normal in any portion.

4. Sounds. Use largest size possible and massage along the whole canal thoroughly with index finger and thumb, thereby emptying glands, obliterating recesses, etc., by pressure against the sound. This means necessitates more time and a thorough knowledge of the gullies and recesses.

Next are the byways, Cowper's glands, prostate and seminal vesicles.

How are the germs to be pressed out here?

(a). From Cowper's glands, by massage on sound or dilator as previously stated.

(b). From prostate and seminal vesicles, by massage with finger. But the prostate's anterior posterior diameter is 1 inch; its apex, 1½ inches from anus. Distance from anus to posterior border, 2½ inches; from posterior portion of prostate, seminal vesicles extend 2 inches; therefore, distance from anus to their posterior portion, 4½ inches. No finger is 4½ inches long, therefore, the question becomes one of reducing distance that pressure may be exerted efficiently.

Means:

1. No ejaculation, 3 days,—equals vesicles distended to full size.
2. Bladder filled to capacity,—equals vesicles pushed near anus.
3. Dorsal position, legs flexed, everted, and relaxed, shortens distance by permitting perineum to be stretched.
4. Trunk semiflexed, abdominal viscera pushes distended bladder near anus.

So far we see any examination is a question of pressure and means of applying it successfully. One specialist may advocate the dilator; another, the sound; both may obtain equal results, knowing the object sought. So in massage, one may say one position, another, another,—but practically, it is a question of distance and length of individual finger. So it is possible to proceed to the end, elucidating principles, systematizing means, both of digging the germs beneath the surface and giving food that they will multiply in sufficient numbers to be detected.

Stating these (and the cost in material, time and labor) in language that can be not only understood, but well evoke interest,—and the needs, criticisms and suggestions then offered by the gen-

eral practitioners will more quickly lead to what will be truly a simple test for cure.

To end, as all medical colleges give practically no instruction on this subject, the attitude of the g. u. specialists toward the general practitioners, on this question, "When is Gonorrhea Cured?" should be, as ultimately it must be, one of broad educational co-operation, whereby, not only will humanity be benefited, but our profession and ourselves. And this is to come, first, through the removal of antiquated customs and traditions, of conducting ourselves and our practice so as to individualize the means to an end, thus making medicine appear a fine art, when it is a science, and every follower is an interpreter of natural laws by the principles of which one and all must be governed.

Discussion.

Dr. Saxton Pope, Watsonville: The question which arises with regard to the cure of gonorrhea is whether it is the absence of the germ or lack of virulence. If we compare it to other troubles we know that a man can have typhoid bacilli in his gallbladder and still be free from typhoid. But can a man have gonococci in his system and still be cured of gonorrhea? It may be possible that he may have domesticated gonococcus. The gonorrheal prostate and seminal vesicles may be the seat of secondary infections. I have seen this occur where the secondary infection with the colon bacillus in a case of glycosuria lighted up an old gonorrheal process. A diabetic contracted gonorrhea twenty years where there was no gonococci apparent but the wife had a chronic leucorrhea and this started up the gonorrheal process in the prostate and gonococci appeared in the discharge. If we go on the presence of the gonococcus we may be misled for it may be innocuous. We have to demonstrate that it is virulent gonococcus. By the opsonic registration we may know whether a man is infected but by that means we only determine his reaction to that particular germ. The only practical test must be experimental.

Dr. A. B. Grosse, San Francisco: I must certainly agree with Dr. Spencer, who has tersely laid down the fundamental laws in his paper, but beyond all this the segregation and experience of one's material along these lines must really be the answer to the above problem. During the last eight years a great many male patients have been referred to me with the query if it were safe for them to marry. Others came complaining of shreds in the urine or a very small amount of discharge. In all these cases a number of microscopical examinations were made as well as repeated cultures. Where gonococci were found, treatment was instituted until this line of examination would prove negative. Cultures if negative to the gonococcus would most frequently show pseudo diphtheria bacillus, staphylococcus albus, streptococci or tetrads.

In several of the cases it was impossible to eradicate the gonococcus and the patients married in spite of the warning given. I have been able to learn only of three of these. Two have not infected their wives up to date. One has two children and the other one. In both these men I have recently been able to demonstrate the gonococcus beyond doubt. The third one infected his wife. The wives of the first two have been repeatedly examined by gynecologists who had received the necessary information from me.

Of the cases where the gonococcus was not demonstrated after repeated and exhaustive effort, I have been able in two cases by getting into communication with the obstetrician to get a report of

the presence of the gonococcus in the cervical secretion.

My experience with vaccines is very limited, but the following case may prove of interest. A man with a chronic urethral discharge lasting eight years or more, in spite of all treatment. Repeated cultures demonstrated regularly the pseudo diphtheria bacillus in pure culture. A vaccine (homologus) made from this micro-organism injected in a dose of ten million, once a week and gradually increased to twenty million, practically stopped the discharge after the first dose and now, several months later, we have been unable to get any growths from the scanty secretion remaining.

In closing, I wish to emphasize that while as yet we have no absolute method, if we follow out the regular routine examinations conscientiously, we come so near getting positive results, that I tell my patient after examination with negative result, that barring accident, he may marry with impunity.

Dr. Granville MacGowan, Los Angeles: The question of gonorrhea is a very serious one with us. Today we have two standpoints. One the standpoint which Dr. Peterkin has given us which is the standpoint of every specialist, and the other the standpoint of the layman. Whenever a man ceases to have a visible gonorrheal discharge he believes that he is well and there is nothing in the world that can induce him to believe that he is not well. The complaint which the woman makes when she comes to us is the discharge. Just as soon as she is rid of it she thinks that she is well. About two years ago Dr. Smith referred to me a friend of his of about twenty-four years of age. He had gonorrhea and that gonorrhea had passed into the prostate and seminal vesicles. After I had treated the case for a couple of weeks Dr. Smith took charge of the case again. About six weeks afterwards the young man came to see me and he still had a slight discharge. He said that he wanted my opinion as to whether he could get married. I told him no and described to him all of the troubles which he might make for his wife. He said that he must get married, that he was engaged and that the wedding had been announced, and that it was during the time of his engagement that he had contracted his gonorrhea. He said that he could not at this time delay the wedding. I advised him to tell the young woman's father. Finally a family conference was held and it was decided that the young people marry but live apart with regard to the sexual relations. The girl's father was a wealthy, well educated and intelligent man and if we cannot teach such men, what are we to do with the ignorant laborer?

Dr. Spencer, San Francisco: With regard to the comments of Dr. Pope I think they are exceedingly timely. We are not able to say when gonorrhea is cured in so many instances because the criteria by which we are apt to judge, that is the scientific criteria of the laboratory and clinical symptoms, may point to the gonorrhea and at the same time the question comes up whether gonococcus is pathogenic for that individual. It is probable that in the experience of many of us, the pathogenicity of the gonococci seems to be so far destroyed that it does not infect the wife. Whether this is the result of long cultivation and thereby the removal of the disastrous effects, we are not able to say. Medical chemistry has not reached that point of refinement by which we may say that the gonococcus is not pathogenic for the new wife. It is true that the long existence does not seem to bear an intolerance in the individual and a non-toxicity. I have had young men come and ask me to cure them wanting to be married in a short time. I have told a man that this is impossible, that he will sacrifice the health of his wife. We physicians must stand as

educators. The public thinks that as soon as the discharge stops it is all right. The lay public is so indifferent that it does not care. We have to keep hammering to make the public understand that the disappearance of the discharge is the simplest feature of it. The lay public must understand that there is more to the gonorrhea than the urethral discharge. In conclusion I think that we have a sociologic problem before us. If parents who have marriageable daughters would have them educated by the family practitioner as to the seriousness of the marriage relations, and if the father would go to the son-in-law, and ask for a definite report from some physician whose opinion was of value to the effect that he was sexually clean, this problem would be helped to be solved.

Dr. G. S. Peterkin, Seattle: I am glad to see that we are at least reporting progress on this subject. The specialist has started to educate the people when he tells them of the seriousness involved in this disease. It does not matter whether his patient disobeys and marries in spite of his advice. The seed has been sown because when the ill health of his wife is before him a few months later he will remember what he was told before he was married. In that way we are at least starting the education of the laity. We can at least teach these patients that it is incorrect to believe that they are cured when the discharge is stopped.

SEBORRHEA AND ITS SEQUELAE.*

By ERNEST DWIGHT CHIPMAN, M. D., San Francisco.

Possibly no disease of the skin is considered more banal and innocuous than seborrhea; and yet a large number of the cases seen by dermatologists are of definite seborrheic nature or in some way are related to what may be called the seborrheic state.

The purpose of this paper is to indicate the wide extent of seborrheic disease; to discuss certain phases of the same; and to suggest a not unimportant role which it may play in the production of malignant diseases of the skin.

At the outset it must be stated that widely different views are held concerning seborrhea, its nomenclature, its etiology and its treatment. These divergent views are of great academic interest but in a discussion meant to be clinical much time will be saved by agreeing upon certain attitudes in advance.

For the purposes of this paper, then, let us proceed upon that basis which limits the meaning of the word seborrhea and thus defines the disease as a condition of excessive oiliness of the surface regardless of whether that oiliness emanates from the sebaceous glands or the sweat glands. Let it be assumed that the disease is microbic without reference to the microbacillus of Sabouraud or the morococcus of Unna. We may then proceed to the consideration of some definite pictures formed at different epochs in the course of seborrhea.

Upon the scalp there is a well defined series. First of all a simple scaliness is observed. The scalp is dry and irritable, the hair lusterless and the scales which are epithelial are thin, branny and fall readily. There is no appreciable loss of hair. This condition, while considered by some as *seborrhea* is in reality

only *preseborrheic* and is better named *pityriasis capitis*.

Next the scales take on a greasy aspect and become adherent to the scalp. No longer are they purely epithelial in character. A certain fat-like substance has been added. The hair, formerly harsh, now becomes more supple and falls out not in any special location, but diffusely; there is a gradual thinning-out process. The oily character of the scales varies in degree so that some of the less oily forms have been described as waxy. To this condition in its varying degrees the name *seborrhea sicca* has been applied. By the majority of writers this condition is so named but Sabouraud calls it *steatoid pityriasis*. This is by far the most common scalp condition encountered and in women it represents as a rule the final number of the series. In men, however, after the scaliness has disappeared in a process covering a number of years, comes the third picture of the series. This is constituted by a simple condition of excessive oiliness—nothing more except that the hair, already thin, shows a greater tendency to fall, particularly at the vertex. If, for this condition of simple excessive oiliness, not only on the scalp, but elsewhere, we reserve the name *seborrhea* the entire question becomes simplified.

The sequel to this condition is seborrheic alopecia. It has been noted by Sabouraud that in the rare cases where women have been affected by this condition the subjects have been of a somewhat masculine type as evidenced by such tokens as incipient moustache and deep voice.

This whole series may proceed from beginning to end without once showing a clinical sign of inflammation. Under the influence of some special exciting cause, however, inflammatory elements supervene; the scalp and even the adjacent skin is reddened, thickened and covered with greasy scales making up the condition known as seborrheic eczema or seborrheic dermatitis.

We have seen that upon the scalp the seborrheic sequence begins as scaliness out of which is evolved true seborrhea. Upon the face and the body in general the relation is reversed, pure seborrhea occurring as the primary affection, the condition in which other dermatoses find their origin. In passing from the consideration of seborrhea of the scalp, however, to that of the face and body one point must be particularly emphasized, namely, that seborrheic affections wherever found are to be considered as consecutive to seborrhea of the scalp.

After the scalp the favorite locations of seborrhea are the face, the sternal region, the area between the scapulae, the axillae and the inguinal folds. From seborrhea as it exists in these localities two classes of condition may arise—the non-inflammatory and the inflammatory. The former group is represented by such conditions as comedones, milia and sebaceous cysts and calls for no special remark. The group of inflammatory dermatoses is classified by French writers under the convenient name of *seborrheides*. These inflammatory conditions are sequels of true seborrhea and assuming seborrhea to be due to a

* Read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

definite bacillus represent an added infection. In this country they are commonly included under the one head of seborrheic eczema although French authors classify them as eczemaform, psoriasiform and so forth according to the disease which they most closely resemble.

Without attempting the finer distinctions we may interpret as seborrheic eczema thickened, reddened patches which may be regular or irregular in form but which have sharply defined margins and are covered with greasy scales. Between the typical seborrheic eczema with its characteristic yellowish greasy scales and the typical psoriasis with its silvery dry scales the distinction is clear but the less typical forms of each disease merge so insensibly into one another that the differentiation, particularly from the lesions alone, may be extremely difficult. Indeed Walker of Edinburgh contends strongly that the two diseases are identical.

True eczema may be differentiated from the seborrheic form as follows:

True eczema does not affect particularly the special seats of seborrheic disease. True eczema itches severely, seborrheic eczema only slightly. True eczema has poorly defined margins—in seborrheic eczema the outline is sharp. In true eczema there is at some time an exudation of serum—in seborrheic eczema this is absent. True eczema is wanting in the greasy aspect which is special to the seborrheic variety.

Certain individuals seem to be subject to seborrheic affections just as others are inclined to gouty or rheumatic symptoms, one manifestation after another following in definite sequence. This is especially noticeable about the face.

Beginning in adolescence the face becomes oily and appears shiny. About the nose particularly the pores become unduly prominent. Finally some of the pores or ducts become occluded and the face is dotted with blackheads. These blackheads becoming secondarily infected, papules and pustules of acne vulgaris are formed. Without vigorous treatment the acne may persist to young adult life and sometimes well along towards middle age. Following come the seborrheic disorders of the bearded region chiefly evidenced as greasy scaliness at times quiescent and at times aggravated. Coincidentally the scalp sequence has been steadily approaching or has become seborrheic alopecia. The entire picture represents what may be called the seborrheic state.

As the subject of this series passes middle age he becomes more and more prone to circumscribed patches of hyperkeratosis or hypertrophy of the stratum corneum. These patches are often called *senile keratoses*. More rarely cutaneous horns occur. There may be no histological relation between these affections and seborrhea but their most frequent occurrence in subjects of the seborrheic state is clinically incontestable. Their relationship to various forms of cutaneous epitheliomata is so generally conceded as to justify their grouping under the head of precancerous affections.

Along with this same group, occurring in the same subjects, certain crusted patches are seen.

Often they develop upon a small keratotic area. They occur not only in subjects of seborrheic life history but affect especially those situations most particularly favored by seborrhea, and carry with them crusts of the same greasy quality which we are accustomed to see in the seborrheic disorders. Upon removing the yellowish, greasy crust an ulceration is found upon which the crust is quickly renewed.

We are now dealing definitely with an epithelioma and the series which began with a commonplace dandruff or an oily nose has passed through successive phases until malignancy is attained.

Let the conclusion drawn from this presentation not be unwarranted. One who watches the development of seborrheic disease, sees the manifold phases which it demonstrates in itself, sees how it modifies the appearance of other concurrent dermatoses, must be impressed with its potentiality. While the etiology of cancer is unknown we may be at least permitted to infer from the abundance of clinical evidence that the seborrheic state renders the skin much more than ordinarily vulnerable to the epitheliomata.

The obvious moral is that just as we excise moles and pigmented nevi for fear of subsequent malignancy, just so should we treat radically the group of precancerous affections related to seborrhea, but better yet treat early and persistently all seborrheic manifestations, directing special attention to the scalp as their ultimate source.

As the disease is of bacterial origin local treatment is generally sufficient. General conditions may play an important part in the production of such sequels as seborrheic eczema and there the treatment is along constitutional lines according to the indications which exist. In pure seborrhea sulphur and resorcin are the most generally reliable remedies. For the more scaly forms of scalp disease the tar preparations are indicated.

CLINICAL FEATURES OF INFLUENZA SINCE THE PANDEMIC OF 1889-1890.*

By HERBERT C. MOFFITT, M. D., San Francisco.

When the kind invitation from your committee came to me a short time since to read a paper upon opsonic work and bacteriotherapy, it was accepted without due consideration. It needed little reflection to demonstrate that my personal experience has been as yet entirely too meagre to admit of a paper of any value. We all too hastily try to assimilate and incorporate new teachings; any new method of investigation or treatment must, after all, be judged by the results of one's own work with it in the clinic. Although encouraged by results of some cases of vaccine therapy, it seems wiser for me at present to counsel discrimination and caution with the method rather than to encourage its widespread application to general practise. With this apology for not spending time with a subject so recently introduced and still waiting credentials, it is my hope that a few minutes may profitably be spent in recalling certain features of an old and familiar friend.

* Read before the Santa Clara County Medical Society, May 20, 1908.

"Influenza," like "rheumatism," has been a term most generously misapplied. It should be recognized that the affection so often described as "clinically typical influenza" is frequently due to infection with pneumococci, streptococci, staphylococci or micrococcus catarrhalis. Some weeks ago a young woman was seen in San Rafael with a peculiar lung condition. She had been ill for three weeks with cough, temperature, great prostration and most unusual cardiac depression. The signs in the lungs had been equivocal, variable bronchitis and shifting areas of atelectasis and edema. When seen she was cyanotic, markedly dyspneic with normal temperature and a pulse of 120; there were no patches of consolidation, but over many areas a tympanitic note with faint breathing and multitudes of fine, dry and sticky rales. The sputum was profuse, greenish and purulent. In light of several cases seen recently, there seemed little doubt that influenza best explained the clinical picture, but nothing was found in the sputum but pneumococci and staphylococci. The convalescence has been as tedious and depression as marked as in true influenza.

D. J. Davis¹ has recently emphasized anew how rarely influenza bacilli are found in the cases reported as "typical clinical influenza," and Jehle² lately reported a grippé epidemic due to micrococcus catarrhalis. Despite the temptation to bring many indefinite febricula, gastro-intestinal attacks and obscure nervous symptoms under this convenient cloak, therefore, it is wise to demand that the diagnosis influenza rest at least in part on demonstration of the bacilli. We no longer believe, however, with Wasserman³ that "Wo Influenza Bacillen, da ist Influenza." For the present it is best to regard as influenza bacilli the many varieties of closely related organisms that have been described under the names of "pseudo-influenza bacillus," Jundell's bacillus catarrhalis, Mueller's trachoma bacillus, Eppendorf's pertussis bacillus, and to recognize that they may frequently be found in the sputum without any clinical evidence of influenza. Pfeiffer⁴ described chronic forms of influenza lasting weeks or months, and occurring most often in patients with lungs rendered less resistant by previous disease. Kretz⁵ in 1897 showed that in forty-seven patients with influenza bacilli in the sputum only twelve had any clinical symptoms of the disease. Kruse,⁶ as did Pfeiffer and Wasserman, found influenza bacilli over long periods in phthisical cases with cavities. Jehle,⁷ Liebscher,⁸ Davis,¹ Auerbach⁹ and many others have written of the frequent occurrence of the bacilli in the tonsils and as a mixed infection in scarlatina, measles, varicella and diphtheria. Lord¹⁰ writes: "In a series of 186 sputa, from cases unselected except to exclude those with tubercle bacilli, organisms resembling influenza bacilli were found in 59 per cent and in almost pure culture in 25 per cent. In eight patients their constant presence in the sputum was demonstrated for two and one-half years." Influenza bacilli in the sputum, therefore, by no means always indicate the disease influenza, and so-called typical influenza may be due to infection with other

organisms. Here, as elsewhere, diagnosis rests solidly only upon the proper union of the laboratory with the clinic.

Since the pandemic, the respiratory type of the disease has probably been of most frequent occurrence. It is the most interesting, as being the most capable of definite proof, and will be the form chiefly considered in this paper. Those who wish descriptions of the varied types of the disease during the last years may read the entertaining symposium in the *Practitioner* of January, 1907, the article of Lord in Osler's *Modern Medicine*, and the excellent paper of Ortner in the *Deutsche Klinik*.

Why there should be definite influenza years we do not know, any more than why the virulence of other infections varies. This has been an influenza winter, and a number of cases of interest have been observed. They are best dealt with under the headings of

1. Influenza Bronchitis.
2. Influenza Pneumonia.
3. Bronchiectasis with Influenza.
4. Influenza as a Modifier of Other Affections.

1. Influenza Bronchitis. Some months ago a young man was referred to me by a throat specialist on account of paroxysms of cough that had been added to a rhinitis and pharyngitis of two weeks' standing. The cough was tremendously distressing, occurred in racking attacks, was most often dry but at times brought up large mouthfuls of greenish sputum. There was no temperature, but the man felt wretched and was perfectly willing to give up his active business. Beyond hyperresonance of the chest, there was little on examination save a few piping rales beneath the right clavicle. Influenza was suggested by the violence of the cough, and the sputum showed almost a pure culture of the bacilli. A mistake was made in sending the patient South instead of to bed; convalescence was slow and the cough persisted for weeks. Last year a woman was seen complaining of severe cough, anorexia and prostration. The illness had started acutely two weeks before with cough and slight fever. There was no temperature while under observation, but distressing cough, profuse expectoration and drenching sweats. Influenza was suspected from the peculiar chest signs, and the profuse purulent sputum gave a pure culture of the bacilli. Respiration was 30 to the minute. There was a remarkable bronchitis confined to the upper right lobe. This was hyperresonant and filled with most varied sounds—piping, groaning, complaining squeaks mingled with sticky bubbling rales of all sizes. Small crackling rales exploded along the sternal border of the lung, and there were quick changes of breath sounds and rales during the inspiratory phase. Ortner well describes this remarkable cogwheel, varying, metamorphosed respiration. Goodhart speaks of a "glutinous bronchitis," of "sharp sticky rales of a quality quite peculiar to the disease." The sudden change of a sharp inspiratory murmur to an amphoric whiff with rales of a metallic ring is always suggestive of in-

fluenza; dilatation of the smaller bronchi, which may develop acutely (Leichtenstern) probably accounts for the auscultatory phenomena. The acute influenza bronchitis is frequently patchy, often confined to an upper lobe, and very apt rapidly to descend into the finest tubes. When diffuse, dyspnea is a marked feature. Graves long ago called attention to this extreme dyspnea; Sippy considers that marked dyspnea, paroxysms of cough and excessive sputum are symptoms that always should suggest influenza. The bronchitis may be dry or may be marked by profuse expectoration. Greenish or heavy purulent nummular sputum is suggestive, but not characteristic of influenza. Not infrequently the condition runs a subacute or chronic course. The peculiar rough cogwheel inspiration with rales of varying size persists over a circumscribed area of the lung, and awakens suspicion of a tubercular process. There is even more doubt if the condition be found without history of an acute onset—nothing but a most thorough examination of the patient and perhaps the tuberculin reaction will then decide.

Chronic recurrent bronchitis may be of influenzal origin. Some months ago a physician of 35 consulted me concerning a cough which had recurred over a period of 18 years. In 1890 in Germany he had a severe "cold"—this was the pandemic year. This left him with occasional cough, which grew worse in an attack called influenza in 1893 in Switzerland. The right apex was said to be involved and "congested." He went to Egypt, but the cough persisted; he lost some weight, and he returned to Switzerland, where the cough completely disappeared in summer to reappear each winter afterward. He came to California six years ago, and has been fairly well and active. His pulse is always rapid, and he finds it difficult to keep at weight and in proper working trim. There has been some cough each winter. At times there is a lot of sputum—a mouthful may come up suddenly when he talks or lies down. He feels that it comes from the right lung opposite the fourth rib in the parasternal line. On examination there was no emphysema, no dullness; the right lung border moved less well on inspiration in the scapular line; there was a decidedly prolonged, roughened expiration in the third right interspace in the parasternal line and a few dry and moist rales on inspiration; just inside the scapular spine on the right there was whispered bronchophony over a small area. A radiograph showed more marked drawing of the right bronchial tree; a tuberculin reaction was negative; the sputum was greenish, not offensive and showed an absolutely pure culture of influenza bacilli. There seems little doubt that this is an instance of chronic recurrent influenza with slight bronchiectasis.

Finkler¹¹ long ago noted the frequent addition of influenza to bronchitis of another kind. This year two cases of chronic emphysema with winter cough were seen, in which the history suggested that the influential bronchitis demonstrated in hospital was a late addition to the old picture.

In a young woman, asthma had developed after an acute bronchitis four years before. Beyond em-

physema and dry bronchitis, the lungs were negative; there was no reaction to tuberculin and the sputum showed a few influenza bacilli, no eosinophiles and no crystals or spirals. An acute attack of purulent bronchitis with asthma led to the appearance of multitudes of influenza bacilli in the sputum.

Apart from the peculiarities noted above, signs peculiar to influenzal infection seem to me of little value. Occasionally one notes the tender points over the trigeminal branches and trachea upon which Ortner lays stress, and the red streak on the anterior faucial pillar described by Franke.¹² The flabby, creamy tongue is not at all constant.

2. Influenza Pneumonia. In January, a girl of 6 was brought for examination on account of malnutrition and indefinite abdominal attacks that had recurred at intervals of two or three months for nearly two years. These attacks were afebrile and marked by colicky pain and diarrhea for two or three days; they suggested larval appendicitis or the intestinal symptoms that are seen not infrequently in children with adenoids and large tonsils. The tonsils were very large and ragged, and they were removed together with a large adenoid some days later by Dr. Selfridge. Unfortunately no cultures were taken from the tonsils. Three days after the operation an acute bronchitis developed which, from the beginning, was marked by violent paroxysms of coughing. The intensity of the paroxysms led to examination of the sputum, which gave predominating influenza bacilli with a few pneumococci. Dyspnea and cyanosis were marked, the pulse rapid, and the bronchitis quickly became localized in two areas—one focus in the right upper lobe and the other at the left base. Consolidation was apparent at the end of ten days—small areas of bronchial respiration contrasting with neighboring foci of fine sticky rales. Nosebleed and vomiting frequently followed paroxysms of cough, and twice considerable blood was mixed with the purulent sputum, which the child brought up in unusual quantity. The heart became so dilated as to suggest pericardial effusion, the liver was large and tender, the spleen was not palpable, there was very slight temperature, and a leukocytosis of 12,000 with polynuclears 75%. The ophthalmo-tuberculin reaction was negative. The plugging of the bronchi to the left lower lobe suggested fluid at the base for some days, but as a rule a few sticky rales could be heard in the otherwise silent area. Gradually the chest cleared and convalescence was rapid. There are still moist rales to be heard below the right clavicle, but there is no consolidation and no cough. During the last months there has been no abdominal attack.

A man was seen two months since in hospital with signs that were first referred to tuberculosis of the right apex. There was history of some weeks' illness with fever, prostration and cough. There was infiltration above and below the right clavicle with varied signs on auscultation—bronchovesicular inspiration, bronchial expiration, dry and moist rales. There was no temperature, however, after the first

day in hospital; ophthalmo-tuberculin reaction was negative and the sputum showed only influenza bacilli. The lobe cleared rather quickly, and on discharge from the hospital two weeks later there were no signs. Some years ago a young woman was seen with infiltration of the right upper lobe involving the lung between the second and fourth ribs, not at the apex. Amphoric breathing and large metallic rales with crackling on inspiration, when breathing with the mouth open, gave evidence of cavity formation. There was a history of failing health and cough following a severe cold two years before. Fever had been occasionally noted; sputum was profuse, and there had been five or six attacks of slight hemoptysis. No elastic fibers or tubercle bacilli were found on repeated examinations; the tuberculin reaction was negative, and influenza bacilli were present in practically pure culture in the sputum.

As far back as 1837, Graves pointed out the unusual frequency of influenza pneumonia in the upper lobes, and emphasized the difficulty of differentiation from tuberculosis. The excellent articles of Lord show how closely the picture of chronic tuberculosis may be simulated. Leichtenstern was able to follow two cases over a period of two years to the autopsy table, and demonstrated the freedom from complication with tuberculosis. The cases with bronchiectasis and interstitial pneumonia are those particularly liable to lead to confusion, as there is cough, profuse expectoration, sweating, often temperature and wasting. There may, however, be simply delayed resolution without signs of breaking down. Ortnier has seen resolution after six months' delay. If a lower lobe be affected and the bronchi plugged, as frequently occurs, repeated punctures may alone determine that we are dealing with delayed resolution and not with fluid.

Fraenkel¹³ showed from numerous observations that shrinking of a portion of a lobe, an entire lobe or of the whole lung, was not an uncommon sequel of chronic influenzal pneumonia.

In March this year a woman of 33 was referred to me on account of attacks of pain in the gall-bladder region. These can be dismissed with the assurance that they were typical cholecystitis attacks. The condition of the left lung was far more interesting, though no complaint was made of any chest trouble aside from a cough of two weeks' standing. There was shrinking of the entire left chest with approximation of the ribs and a left convex scoliosis. The upper lobe above the scapular spine and second rib was intensely dull, the lower lobe below the angle of the scapula was absolutely flat. There was no respiration over the flat area at the base, and bronchial ins- and expiration was heard at the apex; over the scapula there was high pitched tympany, amphoric inspiration and large, consonating metallic rales. The signs indicated chronic infiltration, shrinking and bronchiectasis. A history was elicited of long continued cough and pneumonia nine years before, of severe cough two years before, when she was told of some "lung trouble," and of the present cough of three weeks' duration. There was no temperature apart from cholecystitis, but sweating

was profuse. Ophthalmo-tuberculin reaction was negative. Leukocytes were 9,000 with 82% polynuclears. The sputum was very tenacious, slightly blood-tinged, and contained a pure culture of influenza bacilli. The chronic cirrhosis of the lung may well be of influenzal origin and there is undoubted bronchiectasis, probably secondary to the shrinking. It is interesting to speculate upon the nature of the cholecystitis, and operation will probably later decide.

3. Bronchiectasis with influenza. In July, 1905, a boy of 18 was referred to me by Dr. Henderson of Sacramento. He had been perfectly well until one year before, when his trouble started with an ordinary cold without fever. Cough was dry and occurred in severe paroxysms in the first two months, during which time he lost fifteen pounds. He then began to raise a large amount of purulent sputum, and in another month noticed that this became foul smelling. He was sent to Arizona without benefit, and continued to bring up large amounts of foul sputum. This often came with a gulp and sometimes rushed through his nose without great coughing efforts. The sputum in 1905 was thin, purulent, with extremely foul odor, separated into three layers on standing, and consisted almost wholly of degenerated pus cells. Elastic fibers were present, but no tubercle or other acid-fast bacilli. There were large numbers of bacteria, chiefly actively motile bacilli. Influenza bacilli were not found. There were signs of infiltration and small cavities in the right lower lobe and, as in other cases of my experience, these signs of bronchiectasis with peribronchial thickening were demonstrated far better by the ordinary methods of examination than by radiographs. The boy improved somewhat on forced feeding, myrtol and inhalations of creosote in the way suggested by Chaplin, but the sputum did not change essentially. In November, 1905, three ribs were resected by Dr. Henderson, and the right lung explored. There were very few adhesions over the lower lobe, no marked infiltration, although the lower lobe was more resistant. A discolored area near the base of the lung was punctured, but no cavity was entered. The sputum changed immediately after the operation, losing its putrid character, and the boy felt much better. There was free purulent discharge from the wound, but without odor. This improvement lasted two months, when cough and putrid expectoration returned—evidently the collapse of the lung caused the temporary betterment. In January, 1906, an irregular cavity in the lower lobe was entered through the former wound, and since then there has been little coughing but profuse discharge of foul pus from the wound. The patient gained weight and went back to work, but was sent me once again last December by Dr. Henderson to discuss the advisability of extensive rib resection. For a long time fluid introduced in the wound would be expectorated at once, but lately there has been little cough, and the communication seems closed. The patient has improved greatly in appearance, but finds the stench of the discharge almost unbearable;

and the wound must be dressed three times daily to be at all supportable. The signs at the right base are much more marked than before, and fairly typical signs of bronchiectasis in the left lower lobe have developed. Of great interest was the finding of many influenza bacilli in the smear from the lung sinus, although owing to the great numbers of associated bacteria, pure cultures were not isolated. From the history and clinical course, the most probably etiology of the bronchiectasis would seem to be influenza. Under treatment with X-ray and creosote inhalations and through the use of charcoal dressings, the discharge has diminished, and the odor gives little bother.

As noted above, Leichtenstern¹⁴ described the acute development of bronchiectasis in influenza. This acute bronchiectasis may persist for weeks or months, and finally disappear or may remain stationary or may progress. The shrinking of chronic pneumonia may also lead to bronchiectasis, a mode of origin emphasized by Romberg¹⁵. The excellent articles of Lord and Boggs¹⁶ give the most complete description of the clinical relations of influenza and bronchiectasis. One case of Boggs is particularly instructive as showing that influenza bacilli found in the sputum of patients with bronchiectasis over long periods of time may be decidedly virulent—a man of 60 with chronic cough and bronchiectasis showed influenza bacilli in the sputum, and later developed an empyema in which the bacilli were found in pure culture.

4. Modifications of Other Affections by Influenza. This is not the place to pass in review the multitudes of afflictions attributed to influenza. Gibson gives an excellent account of the influenza heart. Adams¹⁷ has recently reviewed grippe meningitis, and Collins¹⁸ writes of "Influenza in its Relation to Diseases of the Nervous System."

It is well to be cautious in referring indefinite nervous symptoms to influenza and to remember that tuberculosis and syphilis are more frequently to blame. It has not been my experience that influenza has anything to do with appendicitis, although some years ago a patient in hospital for influenza developed a mild appendix attack; Schultes¹⁹ of the German writers, seems to have the most moderate views on this question. It has been my impression that, in grippe years, acute adenitis and glandular fever are more common; Tezenas du Montchel has written of general adenopathy in infants as a precursor of influenza. There is no doubt that influenza may influence most unfavorably a thyroid that before was not exactly normal. It does not seem to act much differently, however, from other acute pharyngeal or tonsillar infections in this respect. It has been my impression that a peculiar brachial neuritis, involving the axillary and musculospiral nerves chiefly, is more frequent when influenza is about, and that the same holds true for thrombophlebitis, spontaneous or after operation. The relations of influenza and typhoid have been much discussed. This year influenza bacilli were found in the sputum of a young man, whose chief symptoms were high temperature of sudden onset,

cough, intense backache and headache. Temperature dropped after a few days, but headache persisted and marked optic neuritis of the left eye was demonstrated. Return of temperature after a week, a Widal reaction and bowel hemorrhages then plainly marked a complicating typhoid. Anders²⁰ published a paper some years ago upon "Typhoid Fever as a Complication and Sequel of Influenza," and Stollkund has written on the same subject.

A word may be added as to treatment. The patient with acute influenza belongs in bed, and it has seemed to me unwise to send subacute cases away to the country too early. Quinine is of some value in the acute stage. Large doses of creosote carbonate and intratracheal injections or instillations (after the manner of Mendel²²) are of service in treatment of the bronchitis; 5% menthol or eucalyptol in oil, 10% iodoform in glycerine are the best preparations. For the chronic bronchitis, unresolved pneumonia or bronchiectasis X-ray should be tried. Creosote inhalations after the method advocated by Ewart and described by Chaplin²³ have in my experience given decided relief in bronchiectasis. In the diffuse bronchitis with failing heart in children, mustard packs as described by Huebner²⁴ should be given a thorough trial. It is my intention to treat the chronic carriers of bacilli, for example the patients mentioned above with bronchiectasis and chronic pneumonia, with autogenous vaccines.

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NOTICE!

Remember to send your changes of address promptly to 931 Butler Building, San Francisco.

PLAGUE.

Being a translation of the Fourth Chapter of "La Pathologie Exotique," by Professor A. Le Dantec of the Faculty of Medicine, Bordeaux.

Translated for the State Journal by Dr. W. C. RUCKER, P. A. Surgeon, U. S. P. H. and M. H. S.

(Concluded from page 283)

The carbuncles (Les charbons) are thus named because of their resemblance to a malignant pustule. The primary carbuncles begin with a red spot resembling the bite of a flea. The center of the spot raises itself as a vesicle and becomes filled with a reddish fluid which distends and enlarges it more or less. After the rupture of the primary vesicle comes a central plaque or sphacelus, about which forms new daughter vesicles. In fact, outside and about the daughter vesicles the skin presents a red color: sphacelating point, daughter or secondary vesicles and inflammatory zone spread themselves upon the surface.

The secondary carbuncles are more spreading than the primary carbuncles. They have been known to denude an entire member. Clot-Bey has divided the carbuncles into three degrees:

First degree. Superficial lesion involving on the epidermis.

Second degree, or anthrax. Lesion involving the skin and subcutaneous cellular tissue.

Third degree. Gangrene of the skin, muscles and bone.

The carbuncles appear usually on the trunk and limbs, but one may observe them in all the regions of the body, the scrotum, the labia, the nose, the scalp, etc., with the exception of the palms of the hands and the soles of the feet. Their number may vary from one to twelve. The carbuncles leave behind them indelible cicatrices.

The petechiae, when they appear in plague constitute a sign of the greatest gravity and generally announce a fatal termination. Sometimes punctiform, the petechiae are about the diameter of a lentil. At other times, however, they may be so large as to merit the name ecchymoses. The petechiae may appear upon the neck, the chest or the limbs, but occasionally they are so numerous that the skin is discolored as if it had been beaten, from which the name, black plague is given this form. (Mertens.)

As the petechiae are, on the whole, an infiltration of blood into the skin, they are generally accompanied with grave hemorrhages in other ways, epistaxis, hematemesis, etc. This variety of plague is also called hemorrhagic plague.

Sphacelus of the extremities is a rare complication of plague. Its mechanism is the same as in other grave pyrexias.

One also observes, as in other infectious diseases, secondary foci of suppuration, furuncles, boils, suppurating arthritis, etc.

The kidneys are also attacked by plague and produce albumen in the urine.

Various psychical troubles may manifest themselves during the course or during the convalescence of plague. In the beginning of the disease one observes a considerable hebetude, the patient understands with difficulty what is said to him. He responds badly, sometimes harshly or incoherently, like a drunken man. Later the stupor is augmented with delirium and hallucinations. Finally the patient sinks into coma and dies without having recovered his intelligence for a single instant before the fatal termination. One observes sometimes psychoses during the convalescence from plague. These are called post-plague amnesias and aphasias. True dementia is very rare. Premature abortion or labor is the rule in pregnant women attacked by plague.

Observation II. (Simond.) Chinese, age 46 years. The subject, of large and strong stature, lives in a quarter outside the city. He has been sick three days. In the anterior cervical region an adenitis has

developed to the point of completely effacing the depression of the neck. The enlarged glands form a solitary mass of very hard, almost woody consistence, painful on pressure, over which the skin is tender, red and congested. The face is flushed, there is intense dyspnea and noisy respiration has been produced by the compression of the trachea by the adenitis. The entire buccal mucous membrane is inflamed, red and bloody. The tongue is covered by a brownish coating and is cracked and swollen.

The axillary temperature is 40°. The pulse is small and 132 per minute. The skin is parched and hot, and does not present any exanthem except that it is red about the buboes. The spleen and liver are apparently normal. The abdomen is slightly swollen. There has been constipation for four days and the urine is scanty. The patient has been in a very weak state for two days. He has presented delirium but at the moment when I examined him he knew what was said to him and responded by signs. The condition of the mouth and the difficulty of respiration did not permit him to speak intelligently. Death supervened twenty-four hours later.

Observation III. (Simond.) Annamite; 24 years old. The patient complains of continuous fever, lassitude and cephalalgia since the 9th of April. He has had some vomiting and was confined to his bed on the 11th. I was called to see him on the night of the 13th. At that time the patient was lying in a state of marked prostration with an intense fever. The axillary temperature was 40.5°. The pulse was 120. The tongue was coated and moist, and he spoke with difficulty. On the right thigh below the fold of the groin is a large tumor formed by two swollen very painful glands. The skin covering it is tender and slightly congested. The spleen and the liver are of normal dimensions but indolent. There has been constipation for several days. The urine is normal in quantity and contains a small amount of albumen. The weakness has been very great for two days, the patient falling upon attempting to go from his bed to a chair and being unable to arise.

During the four days which followed conditions remained unchanged: the temperature oscillated between 39.5° and 40.5°. There was delirium during the night and part of the day. The treatment followed consisted of quinine with cinnamon and ether and purgative injections. On the 18th defervescence began, the pulse fell to 60 and the temperature to 38.5°. The primary swelling diminished in size but the entire lymphatic chain of the groin was swollen and indurated. The improvement continued during the following days. However, one of the two glands first invaded became softened and suppurated. I saw the patient again eight days later completely recovered.

(c) Ambulatory, or attenuated form. This form is characterized by painless buboes accompanied by little or no fever, terminating sometimes in resolution or suppuration. The patient is able to walk about during his illness. Generally one encounters grave forms of plague near these attenuated forms. There are recorded veritable epidemics of attenuated form of plague, for example, the epidemic of benign plague which took place, according to Rossi, in the third regiment of the line at Zagazig (Lower Egypt) in 1842. This is the endemic of Bagdad from 1856 to 1861. Such are the epidemics of attenuated plague which preceded the epidemics of grave plague in India in 1873 (Irak-Arabi), in Astrakan in 1877-1878. At LaReunion Thiroux demonstrated that many of the primary buboes were simply of attenuated plague.

2. Pulmonary Plague or Primary Plague Pneumonia.

Certain epidemics of plague are characterized by great frequency of the pulmonary forms and for a

long time there was great hesitancy in calling these epidemics of true plague. This was the case of the epidemic of Pali. The pulmonary form of plague was frequent in the epidemics of Korassan and Kurdistan. At other times epidemics of plague began as the pulmonary form as at Vetlianka. These were thought in the beginning to be cases of croupous pneumonia. The pulmonary form of plague is characterized by great dyspnoea, blood streaked sputum and by the clinical signs of pulmonary hepatisation. It is thus a pest pneumonia. The mortality is extremely high. The disease described by Renny under the name of Mahamurrie of Guhrival was nothing else but an epidemic of the pulmonary form.

Here is the observation of Mauser, who died of pneumonic plague in India:

Mauser was well until the second of January, when, in the forenoon he was seized with a chill and fever. During the remainder of the day he suffered from a violent headache and nausea with vomiting, generalized pain and cough. The temperature mounted to 39.7, the pulse to 116, the tongue remained clean and moist, the skin normal. That night he was very ill. The third of January he was worse, temperature 40°, pulse 110, respiration 23. In the afternoon he complained of pain in the lower part of the left axilla without engorged or sensitive glands.

The night of the third and fourth he was exceedingly ill, temperature 40.3°, pulse 114, respiration 25. The tongue was moist, with slight coating posteriorly. The patient began to cough and to raise a sero-mucous sputum, streaked red by blood. The axillary pain persisted and auscultation at this level disclosed fine crepitant rales which resembled those found at the beginning of a pneumonia. These rales were deeply seated below the left clavicle. The remainder of the lung and the other organs seemed to be normal.

Still the symptomatology is not that of an ordinary pneumonia. There is not the respiratory acceleration, the dyspnea; the sputum is not adherent; it is more watery, serous rather than mucous; it is stained slightly red. There is more depression than would be expected at such an early date from so small a focus. For this reason Childe made microscopical examination of the sputum and found large numbers of bacilli having the aspect of pest bacilli. The culture developed almost pure colonies of plague.

The 4th and 5th the patient became worse and worse. The expectoration was abundant, the temperature 40°, respiration increased from 35 to 45 and the pulse from 120 to 135. The tongue became dry. The patient died on the 6th in the fifth day of the disease. The nurse who cared for this patient died of the same form in less than four days. (Childe & Netter.)

The cases of plague which are produced in laboratory epidemics are also cases of pneumonic plague. Barisch, the laboratory boy of Vienna, had pneumonic plague. He was attended by Dr. Muller, who also had the pneumonic form and died in less than three days.

The manufactories of rags also give birth to the pneumonic form of plague, as in the recent epidemic of St. Barnaby near Marseilles.

We would especially call the attention of physicians to the importance of the bacteriological examination of the sputum, which alone will clear up all doubt in these cases.

3. Gastro-Intestinal Plague. The existence of gastro-intestinal plague is admitted by only a small number of authors. Hojel reported five observations. Wilm recovered the pest bacillus from the fecal matter of plague patients and has seen one case with a mesenteric bubo.

Gastro-intestinal plague is characterized by evacuations, at first bilious, later hemorrhagic. The pa-

tient presents melena and true hematemesis exactly like black vomit. The epidemic of Recht in 1877 was remarkable because of the great number of gastro-intestinal cases.

One thus sees that it is necessary to know the existence of the clinical forms of plague in order not to commit a fatal blunder, especially at the beginning of an epidemic, when prophylactic measures may be taken to arrest the scourge.

Pathological Anatomy.

The anatomical lesions which one encounters at the autopsy of subjects dead of plague vary according to whether the form be bubonic, septicemic or pneumonic.

1. Bubonic form. The pathognomonic lesion of plague is the bubo, which may be external, bubo of the groin, the neck or axilla; or internal, bronchial glands, or glands of the pelvis. The pest bubo is an adenitis accompanied by hemorrhage and bloody exudation, sometimes by suppuration. The cellular tissue which surrounds the gland is infiltrated with a sanguinolent serum. Sometimes on opening the gland, one finds it the color of lees of wine, just before suppuration takes place. The bacilli of plague first invade the crypt of the gland and finally the folliculi of the same. In the period of suppuration purulent tracts are formed which connect the internal glands with the external glands, glands of the axilla with the bronchial glands, glands of the groin with glands of the pelvis.

2. Septicemic form. When death takes place very rapidly one finds the lesions common to all of the septicemias.

The body is usually covered with petechiae and ecchymoses. In certain cases they are so numerous as to give the skin a blackish appearance, which has caused the name "black pest" to be attached to this form. One may observe here as in cholera spontaneous post-mortem movements, with a coincident rise of temperature. The ecchymotic plaques which are called internal pustules are found on all the serous surfaces, pleura, pericardium and peritoneum. The heart contains fluid blood slightly coagulable. The lungs are deeply congested, sometimes accompanied with pneumonia, broncho-pneumonia, infarcts and abscesses of the same. The spleen is considerably increased in volume. The liver is hyperemic. The mucous membrane of the digestive tube presents here and there ecchymotic spots and ulcerations, principally in the neighborhood of the ileo-cecal valve. The small intestine sometimes contains extravasated blood. The uterus and the bladder present sub-mucous ecchymoses. The brain is deeply congested and on incision presents more or less abundant punctate hemorrhages.

In the place of the hemorrhagic septicemia which we have just described, one sometimes finds, at autopsy, the lesions of a septicemic pyemia, with metastatic foci in all the viscera, lungs, spleen and kidneys. The purulent foci are filled with the bacilli.

3. Pneumonic form. The third type is the primary plague pneumonia with rapid fatality; the glands have not had time to become altered. This acts as a confluent lobular broncho-pneumonia, with involvement of the pleura. The tonsils are often red and enlarged.

Diagnosis.

The diagnosis between plague and the other typhoid diseases, typhoid fever and typhus; does not offer any difficulty for these maladies have one symptom in common, that is, stupor. The characteristic bubo of the common form of plague is a substantial basis for the diagnosis. It is not often in the septicemic, pulmonary and gastro-intestinal forms that the diagnosis can be made without hesitation in the beginning. It is useful in these cases to search for the pest bacilli in the blood and excreta.

Barskoff has described under the name of Si-

berian plague (*Sibirskajajasma*) an infectious disease caused by the bites of insects and characterized by the presence of carbuncles and pustules on the surface of the skin. It attacks animals severely, men less severely.

Prognosis.

The primary pneumonic form and the septicemic or typhoid form are almost always fatal. The grave bubonic form is announced by a succession of symptoms very disquieting from the first, temperature as high as 40°, repeated bilious vomiting, facies drawn, profound stupor, coma, violent delirium, purpura, considerable oedema in the region of the affected gland, etc.

The benign bubonic form is marked on the contrary by an attenuation of the symptoms both local and general, but in the presence of a case of this class one should reserve the prognosis, for death has been observed to follow a plague bronchopneumonia in patients who were apparently out of danger. Plague is almost always fatal in children and in the aged.

Mortality.

We have previously established that all races present more or less the same receptivity for plague, but we will see now that once the disease has been contracted, all do not offer the same resistance to the virus. According to Simond, the resistance is manifestly greatest in Europeans. Thus, in India, their mortality was between 38% to 39%, while that of the Mohemmedans was 70% and that of the natives was always above 80%, reaching over 90% in the lower castes. The mortality of the hybrids was between that of the Europeans and the Musselmans. Good health and good food increase the individual resistance of all the human races.

Prophylaxis.

The prophylaxis of plague, like the prophylaxis against cholera, requires three successive lines of defense. 1. International prophylaxis, which comprehends the measures adopted by the league of Europe against the invasion of pestilential diseases. 2. National prophylaxis, which comprehends all the measures taken by the French government against the importation of plague into its proper territory. 3. Finally, interior prophylaxis or public hygiene, charged with combating the plague once it has disembarked and reached the interior territory. This triple line of defence may be compared to the triple line of defences about a besieged city; first, the exterior line of forts represents the international prophylaxis; second, the ramparts represent national prophylaxis; and third, the barricades of the streets represent the measures taken for the public hygiene. It is the latter which we will study in this chapter, the two former relating to the international and national sanitary police, which is considered at the end of this volume.

The prophylaxis against plague on land comprehends:

1. Measures to be taken to prevent plague.
2. Measures to be taken in the presence of a case of plague.
3. Measures to be taken in the presence of an epidemic of plague.

Measures to be Taken to Prevent Plague. War Against the Rats. The rat being the specific vehicle, as one might say, the commercial traveler of plague, if one would wipe out that animal, one would cut off at the same time all chance of the propagation of plague throughout the world. From this is born the idea of declaring war of extermination against rats. It is the great question of to-day.

In the first place, from a historical point of view, it is well known that the rat is not an autochthonous animal; it has come from Asia by two successive emigrations. The first emigration was that of the black rat, having a tail longer than the body, which

dates somewhat prior to the fall of the Roman Empire. The second emigration was that of the brown rat, having a short tail and a large body, which invaded all Europe at the commencement of the 18th century. The brown rat, being more hardy, hunted the black rat almost to complete extermination, until it was obliged to seek refuge in the fields. Thus the brown rat actually reigns as master in the cities, where he inhabits the drains, the cellars, the sewers, etc. The havoc caused by rats is estimated at many millions per year.

The idea of declaring a war of extermination against these rodents began in Denmark, where Zuschlag has been a veritable promoter and apostle of this new crusade. Zuschlag associated others with him as a committee and was charged with the collection of the necessary funds for this campaign in a new field. The committee offered a bounty of fourteen centimes for each rat tail which was brought to them. In a few months one hundred thousand rats were exterminated. In 1901 the committee organized at Copenhagen an international exposition of the apparatus for the destruction and capture of rats. The anti-rodent movement spread to the rest of Europe, America and Australia. In France, Granjux has been the initiator of this movement. He reproduced in "Le Caducée" the designs of ingenious apparatus for the capture of rats and has published in that journal two articles on the question in hand. All the procedures employed for the destruction of rats reduce themselves to five systems:

- (a) The system of poisonous preparations.
- (b) The system of virus.
- (c) The system of traps.
- (d) The system of bounties.
- (e) The system of gaseous asphyxiants.

(a) Toxic preparations. The various pastes called "death to the rat" have for their base arsenious acid, phosphorus or strychnine. All these preparations are inconvenient in that they kill the animal on the premises, where the cadavers produce an insupportable odor during the entire time of their putrefaction. The system of viruses presents the same inconvenience.

(b) Virus. In 1893, during an epidemic which appeared spontaneously in the field mice and squirrels in Seine-et-Marne, Danysz isolated a *coccobacillus* from the cadavers of these dead animals. As this *cocco-bacillus*, virulent for this species of vermin, was absolutely non-toxic for man and domestic animals, Danysz conceived the idea of using it for the systematic destruction of rats. The experiments made recently at Aigre, Oradour and Mons, on a surface of 1200 hectares, 95% of the rats were killed with the experimental epizootic. Following these conclusive experiments Parliament, by the law of March 24, 1904, placed at the credit of the Pasteur Institute 295,000 francs for the manufacture and shipment of sufficient quantity of Danysz virus to treat 150,000 hectares. This war of extermination was made necessary by the progressive invasion of the fields by field mice in Charentes, Calvados and Marne. The following is the procedure for the distribution of the virus: Little cubes of bread are soaked in the bouillon culture of the *cocco-bacillus* and placed in the opening of each rat burrow. In about 8 to 10 days a fatal epidemic appears among the rodents.

(c) Trapping rats. The system of capture of the rats in cages is to be recommended because it permits the examination of the bodies of the rats. This is the system employed by rat catchers.

(d) Bounties. The system of bounties has proven more efficacious because it includes all the different systems employed by professional rat-catchers for the capture of these animals. It has been adopted by the English in India and Hongkong, and also by us at Tonquin. At Hanoi the bounty was ten cents

per rat at the beginning but, on account of the fraud perpetrated by the natives of importing the rats from the frontiers of China, it was necessary to reduce the bounty to one cent. In the space of one month 640,000 rats were exterminated.

(e) Gaseous asphyxiants. The system of gaseous asphyxiants, carbon monoxide, carbonic acid and sulphurous acid are all to be employed in the destruction of rats on board ship. We will speak of them in the addendum under the maritime sanitary police.

2. Measures to be Taken in the Presence of a Case of Plague. When a suspicious case of plague is discovered, the physician is required to advise the local authorities and in co-operation with them to take a series of measures for the isolation of the patient and the destruction of the contagion. Here is the enumeration of these measures:

(a) Obligatory declaration. All cases suspicious of plague should be immediately declared, first to the mayor, second, to the sheriff or deputy sheriff.

(b) Telegram to the director of the Laboratory of the province. The physician should advise telegraphically the director of the bacteriological laboratory of the maritime province to which he belongs. Here are the cities in which there is an officially named director: first province, Lille; second, Rouen; third, Brest; fourth, Nantes; fifth, Bordeaux; sixth, Montpellier, Marseilles, Algiers, Oran, Constantino, Tunis.

(c) Isolation of the patient. The patient should be immediately isolated in another place in order to allow the disinfection of that which he has contaminated. If there exists an isolation hospital and ambulance, the patient should be immediately taken there and the vehicle which served for this purpose immediately washed with an antiseptic solution.

(d) Precautions to be taken in the sick room. Before the entry of the patient, the room should be freed of the curtains, the hangings, the carpets, and all the furniture which is not indispensable. The bed should be taken apart and washed with an antiseptic solution and placed in the middle of the room. The mattress, the sheets and bed-clothing should be placed in an oven to kill all living parasites. The floor should be washed with an antiseptic fluid, especially in the cracks and angles so as to kill the fleas and parasites. It should be washed with an antiseptic every day.

The patient should be kept in a state of constant cleanliness. The person nursing him should be subject to the following rules:

To be immunized by an injection of 10cc of Yersin's serum.

Not to take any food or drink in the patient's room.

Never to eat without having washed the face and hands with soap and a disinfectant solution, or without having rinsed the mouth with a hydrochloric acid lemonade, 4 gm. to the 1000.

The room should be thoroughly aired several times daily.

The soiled linen should be immediately plunged in a vessel containing an antiseptic fluid.

(e) Disinfection of the infected room. The entire bedding, mattress, sheets and blankets, all the body linen and clothing of the patient, and the curtains of the room should be heated in an oven at 120° C. All articles which will not permit of fumigation with sulphur should be fumigated with formaldehyde or moist steam at the temperature of 70°.

For disinfecting the apartment, sulphur dioxide is the best means after having sealed all the cracks with strips of paper. Thirty to forty grams of sulphur to the cubic meter are necessary.

If sulphuration is not possible, the entire surface of the room, ceiling, walls and floor should be washed with a solution of corrosive sublimate, sublimate 1 gm., salt 2 gm., water, 1000.

It is important that the persons charged with the disinfection should wear special garments which are to be disinfected at the end of these operations.

3. Measures to be Taken in Case of an Epidemic of Plague. Epidemics of plague are no longer known in Europe, because the rigorous isolation of the first case, joined with the disinfection of the locality, arrest the disease immediately. But this is not the same in colonies where the European authorities are not warned until the epidemic has begun. In such a case it is necessary to take the following radical measures:

(a) Destruction by fire of all the contaminated villages.

(b) Disinfection of all the clothing left at the disposition of the inhabitants.

(c) Transport of the infected population to another village especially constructed to prevent communication with the neighboring towns. Injection of prophylactic serum.

(d) Construction of an isolation compound for all plague patients.

(e) Destruction of the rats and mice in all the villages of the country.

Quarantine should not be raised until after the close of the epidemic. The patients should not be liberated until after another minute disinfection of their bodies (bath) and clothing (steam under pressure).

Treatment.

The treatment of plague includes preventive and curative treatment.

1. Preventive treatment. The preventive treatment is applied in the hope of protecting from plague persons who sojourn in plague countries. Two products have been used for this, Haffkine's lymph and Yersin's serum.

(a) Haffkine's lymph. We have seen in the chapter on bacteriology that Calmette, after experiments made upon animals gave a favorable opinion on the employment of Haffkine's preventive lymph. However, other experimenters working on the same animals have arrived at conclusions diametrically opposite. (Simond, Vassal.) This does not necessarily judge the method as applied to man, for the statistics published in India, where more than 400,000 vaccinations have been made, are very favorable. Also the English government has favored all taking the Haffkine's vaccination, by according to the vaccinated natives many advantages, such as freedom from quarantine, authorization to be treated at home, etc.

Haffkine's method is open to the following objections:

1. The method is not surely efficacious, for the vaccinated take plague, like the non-vaccinated, though in much smaller proportions, 1 vaccinated to 4 non-vaccinated.

2. Immunization is not acquired till the seventh day, a grave objection in time of epidemic.

3. The injection is very painful. It produces immediately a very active local reaction. The neighboring glands become swollen and the temperature sometimes reaches 39° to 40°. The inoculated patient is obliged to stay in bed for several days. In the presence of these results it is better to have recourse to serum vaccinations.

(b) Yersin's serum. This method has weighty advantages over the method of Haffkine.

1. The immunity acquired is immediate, an important thing in checking a beginning epidemic.

2. The injection is not painful, which makes it accepted more easily than that of Haffkine.

3. The immunity is certain during a minimum of ten days, as has been proved by all experiments made upon animals. The dose to be inoculated is 10cc. for an adult.

2. Curative treatment. The curative treatment

comprehends both the medical and specific treatment by serum.

The medical treatment is purely symptomatic. It consists in administering tonics and diffusible stimulants and cold baths whenever the axillary temperature is very high. If one does not have antipest serum, we advise the use of intra-venous injections of collargol, 2½cc. of a 1% solution.

The specific treatment consists in antipest serum therapy. Two antipest serums have been tried in the treatment of plague, the serum of Lustig and the serum of Yersin.

(a) Antitoxic serum of Lustig. We have seen in the chapter on bacteriology the way of making this serum. Galeotti and Polverini have tested its curative virtues for man in the epidemic of Bombay of 1898. The injection was made beneath the skin of a dose of 10 to 20cc. repeated twice the first day and continued on the following days. The total quantity of serum injected into an adult varied from 60 to 80 cc. The mortality in treated individuals in three series covering fifty-nine cases was one per cent.

The monograph of the two Italian authors has been thus summed up by Netter:

The treatment has greatest chance of success when it is commenced early in the disease. The authors have been able to cure three cases of septicemia because they began on the first day. They were never successful in curing the pneumonic form which they consider as absolutely fatal.

(b) Antitoxic and antimicrobial serum of Yersin. Here is an experiment made by Simond in India which proves the efficacy of the serum from a therapeutic viewpoint in the animal most closely approaching man:

"We diluted with 4 cc. of sterile bouillon two drops of blood taken from the heart of a rat dead of spontaneous plague, the blood containing the bacilli in pure culture and in great abundance. Immediately afterward they injected this liquid into two large apes of the same species, size and weight. Each received an injection of 2 cc beneath the skin of the thigh. After about twelve hours the two animals presented large right inguinal buboes, intense fever, stupor, difficulty in walking and great feebleness. The symptoms were identical in all respects in both animals. Twelve hours later, that is to say, twenty-four hours after the inoculation, we injected 20 cc of serum into one taken at random. This one changed notably in his condition in the few hours which followed, and the day afterward he took a little food and seemed less depressed while the control was much worse. The latter died sixty-seven hours after inoculation. On the contrary, the ape treated with serum recovered. The fever of this one fell on the fourth day and suppuration of the bubo took place from the sixth to the tenth day."

At the beginning of the use of serum therapy in the treatment of human plague the injection was always made beneath the skin. Calmette and Salimbeni, at Oporto, used for the first time intravenous injections in the treatment of plague pneumonia, which prior to this time had always been considered fatal. Thanks to this energetic method they obtained three cures out of three cases treated. After this, the treatment by intravenous injections was employed in the bubonic form of plague. Vassal, at La Reunion, and Noc, in New Caledonia, made intravenous injections of 40 cc to 60 cc twice daily. The effect of these large doses was the checking of the disease. Vassal inoculated 20 cc in the veins and 40 cc or less beneath the skin the first day. He renewed this double injection 12 hours later if the case was grave. The total quantity of serum used in treating a single patient was as high in one case as 440 cc. In using intravenous injections, care should be taken to avoid the introduction of air in the veins. Here is the method of operation:

One chooses a syringe which will empty itself

completely and a flask of clear serum. If the serum is clouded it should not be used until after filtration through antiseptic cotton. The serum should be heated to about 37°, the syringe filled and freed from any bubbles of air which it may contain. After having sterilized the selected region (fold of the groin, back of the hand or malleolar region) one applies at the base of the member a constricting bandage to cause the vein which is to be injected to fill with blood. One lifts the skin with the left hand and with the right forces the point of the needle of the syringe into the vein. The blood flowing out drop by drop shows that one is well within the vessel. One then fits the beak of the charged syringe upon the free end of the needle and makes the injection slowly. In four or five minutes one may release the bandage slightly. To be sure that one has not injected a bubble of air one does not empty the syringe entirely. The needle is removed and a little collodion applied.

The hypodermic injection is made in the right or left flank. One has no advantage over the other except as it be near the glands.

The results obtained are very variable. This variability is dependent on many factors, the antitoxic power of the serum, racial peculiarities and early or late intervention. Yersin, in his first trials in China, had magnificent results in antipest serum therapy. Twenty-one cures out of twenty-two cases. Later, in India, the statistics were less favorable, the mortality being 49%. At La Reunion, Vassal obtained the following results:

Mortality in 38 cases treated with serum, 8%.

Mortality in 80 cases not treated with serum, 30%.

To apply the serum therapy in a methodical way the blood should be examined once or twice daily for plague bacilli and to ascertain the leukocyte reaction. Noc, in New Caledonia, remarked that after each injection of serum there was a diminution of bacilli in the blood and an increase in the polynuclear leukocytes.

All the authors who have used antipest serum therapy insist on the importance of early intervention. The following table was drawn up by Yersin after his trial of serum therapy in Bombay in 1897:

Patients inoculated first day, mortality....	12%
Patients inoculated second day, mortality....	35%
Patients inoculated third day, mortality....	50%
Patients inoculated fourth day, mortality....	66%

The rule of antipest serum therapy may be expressed in a few words: act quickly and energetically. Quickly, that is to say, in the shortest possible time after the beginning of the disease. Energetically, that is to say, by intravenous and subcutaneous injections.

It is well to warn the patient that the serum sometimes produces skin eruptions, which are harmless. This precaution should be taken prior to the injection of antipest serum into healthy patients. During the quarantine of the "Senegal," such results of serum vaccination produced considerable anxiety among the passengers who had not been previously warned of the possibility of a skin eruption.

A GLANCE OVER THE DEVELOPMENT OF THE TECHNIC OF MODERN GYNECOLOGICAL OPERATIONS.*

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While glancing over the development of gynecology I became especially interested in finding out the various steps gynecological treatment has taken. Forty years ago the work of the gynecologist was

*Author's abstract of paper read before the American Gynecological Society in Philadelphia.

limited to medical and orthopedic applications to the vulva, vagina and collum uteri. One was timid about entering the uterine cavity, but after Simpson and E. Martin had made the decision of the narrowed os uteri and after the employment of the ecraseur of Chassaignac a step forward was noted. About this time too Atlee, Peaslee, Spencer Wells, Baker, Brown, Koeberle and Keith had met with good results from laparotomy for abdominal neoplasms. Marion Sims, Gustav Simon and Hegar were among the first to lay bare the vaginal vault and inaugurate the plastic work on the collum and vagina. Emmet's trachelorrhaphy and the successful fistula operations of Simon and Bozeman were triumphs of this time. Intrauterine treatment was now improved by the use of sponge tents in dilating the cervix and opening up the uterine cavity to the curette and medical applications.

Next abdominal surgery advanced. We operated not only upon neoplasms, but upon inflammatory tissue. Lawson, Tait, Hegar and I proved at that time the possibility of satisfactory results from abdominal section in cases of oophoritis and salpingitis. At the time we also learned that many of these supposed inflammatory masses were due to ectopic location of a fertilized ovum. Meanwhile W. A. Freund had by a combination of abdominal and vaginal methods operated upon cancer of the uterus. The method being enlarged so as to include pelvic tissues and retroperitoneal glands is to-day the typical carcinoma operation. Freund's advance gave impetus to extirpate the carcinomatous uterus by the vaginal route. Czerny, Billroth and Schroeder led the way. While this has been more or less dropped, a step was taken, for we learned to separate the uterus vaginally in case of non-malignant disease, to operate on the adnexa, and even to preserve them after removal of diseased parts, this being the beginning of conservative operations in gynecology.

About this time, too, another step was taken in treating deviations of the uterus through the vaginal route, and the ideas of Saenger and Olshausen have opened up a wide field of operative work for utero-fixation. Later the Alexander-Adams operation began to supersede ventral fixation, and Dührssen showed at the beginning of the last decade that there was a safe vaginal route of exploring the true pelvis and its organs. It seemed for a time that abdominal operations would be limited to large tumors, but soon a reaction set in, at least so far as extrauterine pregnancy and inflamed adnexa were concerned. To-day enthusiasm for vaginal operation has subsided.

The advances in gynecology were greatly helped by the increased knowledge of pathological anatomy and the ability to differentiate the processes before a tumor distended the abdomen, or the entire pelvis was blocked by diseased organs. Following Karl Ruge we now diagnose disease from microscopical examinations, biochemical tests, and culture and inoculations, but we dare not forget that there is yet here much field for exploration. Of course, the replacing of asepsis for antiseptics has been of great help in this advance, and we all honor Holmes, Seimelweiss, Pasteur, Koch and Lister.

To-day sufficient up-to-date material is at hand to study not only primary results of operations, but also whether the results of such operations be permanent or not. After such critical examination we must admit that even though the vaginal method so far as localized processes go leaves little to be desired, laparotomy claims preference.

The mortality from opening the peritoneal cavity has been lessened from the vigorous stand against septic infection. It is being universally attempted to shorten operative procedures and expose the peritoneum as little as possible, and to lessen the

deleterious effects of narcosis; but we yet have to deal with the stretching of the scar and ventral hernia. Primary union and not stretching the wound has much reduced this, yet where drainage is called for this sometimes can't be omitted. Another danger even after healing is the adhesions of the intestines and omentum to the abdominal incision and tumor stump. No means is at present at hand to prevent them for neither the careful handling of the peritoneum, nor the attempts to prevent this process by oily substances or salt solution, nor the early action of motus peristalticus counteracts these complications to any satisfactory extent. They will be a constant danger in laparotomy at all events, more so than in vaginal operation. Of course, the pelvic organs are not insured against similar adhesions, but my own extensive experience teaches me they are hereby very much less frequent. Certainly the vaginal operation requires a special training, but the advantages gained are a sufficient return for the pains, and even more when we consider that patients get upon their feet again quite as soon as after a normal birth, earlier than after the most simple laparotomy.

The vaginal operation can only be considered for a limited field in gynecological affections, but no one is entitled to say that tumors of the uterus or ovaries should only be approached by this method so long as they are in the true pelvis. I do not know of such a limitation. The boundary does not depend on the true pelvis, but upon whether the tumor is freely movable. Even small tumors firmly fixed should not be attacked by the vaginal route. On the other hand, larger tumors can be attacked, if movable, and by morcellation or puncture have their size reduced. Sometimes adhesions can be separated, but usually I consider them as a counter-indication.

The treatment of acute inflammatory affections of the tubes and ovaries has also changed during the last few years. We now recognize that gonorrheal infection starts in an acute attack. Under proper treatment healing takes place and may be so complete that full functional activity is regained, and dried pus, thickenings and callosities indicate beyond question that serious processes do at least become quiescent. These observations compel us most earnestly to consider whether it is right to remove these inflamed organs as long as there is no immediate danger to life. In fact patients do recover without operation in spite of gonorrhea, tuberculosis, puerperal fever and septic infections.

ALAMEDA COUNTY.

The regular meeting for July was held on the 21st and called to order by the president, who introduced Dr. Charles G. Levison, of San Francisco.

Dr. Levison, before operating, reviewed the subject of local analgesia. He stated "that while Schleich deserved all credit for popularizing infiltration anesthesia, it must not be forgotten, however, that Reclus is the originator of this method. Schleich's position in local analgesia is due to the fact that he first advocated the use of the very weak solution of cocaine. It was in 1886 that Reclus first advocated infiltrating the skin, and at this time and for years subsequently, he employed cocaine in a one-half per cent solution without any mishap, using as much as 20 centigrams at one sitting. He claimed that the danger in the use of cocaine hypodermically lay in the employment of strong solutions, not in the amount of the drug used.

Reclus claims that a few drops of a two per cent solution of cocaine are much more dangerous than the employment of a much larger quantity of a one-half per cent solution. Reclus also insists that the patients are to be kept in a recumbent posture for one

hour following the operation and he believes that many cases of syncope following the use of cocaine are due to the fact that the patient is allowed to leave the table as soon as the operation has been concluded. By observing this precaution and by the employment of a one-half per cent solution of cocaine with a maximum dose of 20 centigrams Reclus has performed over ten thousand operations without an accident. He now uses a one-half per cent solution of stovain instead. Kocher employs a one per cent solution of adrenalin-novocain in his goitre operations.

Dr. Levison's observations in the Kocher Clinic were, that the phlegmatic German Swiss was the best subject for local analgesia and the French Swiss was the poorest, while the Italian Swiss was to be compared to the American as far as susceptibility to local anesthesia was concerned. Kocher generally waits fifteen minutes after the injection is made before commencing the operation. Dr. Levison stated that while he had used spinal anesthesia in about seven hundred cases, he has now discarded the same, as he believes that ether or gas narcosis carefully produced is not associated with as much danger as is the case with the lumbar anesthesia.

In describing the method of local analgesia for rectal operations, Dr. Levison stated that he employed a one-half per cent solution of stovain and that he follows Reclus' technic in detail. He stated that it was possible to perform all the operations upon the rectum, such as division of the sphincter, fistula in ano, and the Whitehead operation under this anesthesia. The following are the steps of the Whitehead operation for hemorrhoids that Dr. Levison performed before the Society under stovain anesthesia.

In the operation about fifteen cc. of a one-half per cent solution of stovain were consumed. The patient was placed in the exaggerated lithotomy position using the clover crutch. The operator explained that his reason for employing the crutch was due to the fact that with the stirrups that are generally employed on the table, the perineum cannot be satisfactorily exposed. Then a number of very small tampons of different sizes (to which a thread had been attached) and which were saturated with a one-half per cent stovain solution, were separately introduced through the anus, the smallest first. With the anus retracted on the one side by the operator and on the other side by the assistant the patient was told to bear down; and then each tampon was grasped with a hemostatic forcep and pushed into the rectum. After about twelve of these tampons had been introduced, anesthesia of the rectal mucosa was complete; then a syringe filled with a one-half per cent stovain solution and mounted with a curved hypodermic needle, was introduced into the anal skin margin and the entire circumference of the anus was infiltrated with this solution. The gloved finger was then introduced into the anus and a long straight needle mounted upon a hypodermic was introduced into the skin deep into the tissues parallel to the rectum until the sphincter was reached. The sphincter was also infiltrated. This was easily recognized by the resistance offered to the needle. The fluid was injected into the tissues as the needle was introduced. The finger was introduced into the rectum to obviate the entrance of the needle into the rectum. At this stage the sphincter ani was fully paralyzed and it was devoid of sensation. It was easily divided and the Whitehead operation was completed without causing the patient any pain. After one hour he was allowed to get up, dressed himself and he stated that he felt no inconvenience whatever. He then went home, a distance of twelve or fifteen miles, in an automobile. The dressing consisted of a three-quarter inch tube wound with gauze upon

which vaseline had been smeared and which was introduced into the rectum. This, Dr. Levison stated, was allowed to remain in situ for five days, during which time the patient is kept constipated and is allowed nothing but a soup diet. After this the patient is practically recovered.

The following is a brief synopsis of Dr. Levison's paper on "Lumbar Appendicectomy":

Often when the abdomen is opened during an attack of acute appendicitis, it is not infrequent that the search for the affected organ is futile. As this is not a new or unique experience to many operators, it is the belief of the writer that, in cases such as these, the appendix might be discovered if sufficient care were taken to determine its position previous to operation.

Localization cannot be accomplished unless the so-called "McBurney point" within certain limits be ignored, because this spot teaches us that the appendix is involved only when it is found within this area. A case which bears out the above occurred in the writer's experience recently, where an operation upon a young woman revealed a gangrenous appendix situated in the pelvis. The necrotic organ had produced an abscess with consequent bowel obstruction.

The case, which first attracted the attention of the writer concerning this subject, occurred in an individual who had never been sick prior to his present illness, at which time he was seized with a violent abdominal pain. He was given a cathartic and on the following day was fairly comfortable; temperature, 100.6°; pulse, 90. On the day following he was comparatively comfortable, but there was some abdominal tenderness upon pressure. He was brought into the hospital the following morning by his family physician with a temperature of 102.4°; pulse, 96. He had no pain upon movement, but had some tenderness to pressure. He was seen by the writer at 3 o'clock in the afternoon; temperature, 102°; pulse, 100. Leukocytes 18,000, 80 per cent of which were polynuclear.

When questioned as to whether he had pain, he answered that he had none. He had no pain upon movement, and was able to turn in bed without any discomfort. Abdominal examination revealed no tenderness whatever in McBurney's point or in the right iliac region. Deep pressure made in the region of the anterior superior spine (lumbar region) caused the patient considerable pain. At this point there was marked rigidity. Dullness in the right flank corresponded to a continuation of the mid axillary line. The dullness, while it was not continuous with the liver dullness, occupied the right lumbar region almost completely. The tympany of the colon could be elicited so that the dullness was tympanitically dull, not absolute. There was no jaundice present. The diagnosis of recto-colic appendix was made to the exclusion of gall-bladder condition; as the urine was normal, paranephritic abscess was ruled out. This conclusion was reached in consideration of the tympanitic area between the dullness and the liver, despite the fact that the appendix region did not appear to be involved.

An incision four inches long was made two finger-breadths above the crest of the ilium, extending to one inch in front of the anterior spine. The gridiron operation was performed with more difficulty than is experienced in front on account of the thick bellies of the abdominal muscles which were encountered. There was no trace of exudate or fluid found within the abdomen when the peritoneal cavity was opened.

Palpation of the colon in front and behind, did not reveal the presence of the appendix and it was only by strong retraction of the colon forwards that its posterior surface was exposed and with it a gangrenous appendix which extended from the anterior superior spine to the under surface of the

liver. The appendix was gangrenous from its base to the extreme tip, being the only appendix within the writer's recollection which was found completely necrosed. There was no induration and nothing to indicate the presence of the appendix, which would never have been discovered if it had not been exposed to direct view. It was removed by ligation. Convalescence was without particular incident, with the exception of the formation of a fecal fistula, which closed within three weeks.

Recapitulation.—The rule to be observed in the surgery of the appendix is to make the incision correspond to the position of this organ. It can frequently be localized if the situation of the exudate and rigidity is kept in mind. When the exudate is situated in the loin, a diagnosis of a retrocecal appendix should be made, excluding, as far as possible, paraneuritic abscess and gall-bladder disease. If low down, the differentiation from pelvic disease should be made. Naturally the classic form must first be thought of. Upon looking over the literature, I find that this subject, strange to say, has been almost entirely overlooked.

Some thirteen years ago, at a time when it was considered good surgery to hunt for the appendix, despite the condition of the patient, the writer's practice was to discontinue the search as soon as he realized that this could not be properly and successfully accomplished. Largely through the influence of Dr. J. B. Murphy this practice has now been generally adopted, so that today it has been accepted as a principle. It is the conviction of the writer, that in those cases where the appendix is not discovered, that the offending organ is situated in the retro-cecal space. With the appendix in this position and the abscess incised in the usual manner either through the Lennander or McBurney incision, the pus is evacuated, but the appendix is not discovered because it is practically extra peritoneal. On several occasions in the author's experience when the appendix has not been found at the operation and when a recurrence has taken place, the diseased appendix at operation in each instance has been found in the retro-cecal position, and then only after a long and tedious search. I fancy similar experiences have occurred to many surgeons.

The discussion was opened by Dr. Schmoll of San Francisco, who said that deep appendiceal troubles often simulate renal stones. Centrifugized urine would generally clear up the confusion, although not always. Colitis often simulated it. He had seen a few cases of acidosis following appendicitis. He did not believe that the clinician could locate the position of the appendix, although he may make a fairly good guess; nor did he think its particular location the all important feature. It was more important to first decide if the patient had appendicitis, then was it a case for operation. Recurrent appendiceal pain after the appendix had been removed has been found due to renal calculi.

Drs. Clark, Rowell, Crosby and Hamlin completed the discussion.

Dr. W. A. Clark then presented the following:

Report of Case of Ruptured Extra Uterine Pregnancy Complicated With Diphtheria in Which Large Doses of Antitoxin Were Used.

The following case is reported because of a possible record dose of diphtheric antitoxin being given:

May 18, 1908, 11 a. m., called by Dr. Reynolds of Hayward to see Mrs. R., who presented the classic symptoms of ruptured gestation, the rupture having taken place at 9 p. m. of the evening previous. At this time her pulse was 162. An hour and a half later she was placed on the table in her own home, pulse being 174. On opening abdomen the usual conditions incident to a ruptured tubal pregnancy right side were found. Patient was re-

turned to bed in a half hour doing quite well, the appendix also being removed. The pulse with the salt infusions having dropped to 120 at 4 p. m.

At 3:30 p. m., May 19th, Dr. Reynolds reported temperature 103°, pulse 144, respiration 40; at 6 p. m., temperature 104°, pulse 158, respiration 44; patient restless, feeling quite strong, and some pain in the abdomen. Temperature varied during the night between 104 and 101°, pulse always high, 140 to 158, and respiration 36 to 40. She also complained of feeling chilly. Temperature gradually fell until May 22 at 8 a. m. it was 99.5°. At no time, however, did the pulse go below 140. Nurse at this time reported considerable phlegm in throat, but a comfortable night. At 3 p. m. the same day the patient complained of sore throat. On inspection a typical diphtheric throat was encountered. This diagnosis was afterwards confirmed bacteriologically. Eight thousand units antitoxin were given at 9 p. m.; May 23, 8 a. m., 11,000 units; 10 p. m., 6,000 units given. May 24, 10 p. m., 14,000 units. May 25, 10:30 p. m., 15,000 units. May 26, 3:45 a. m., temperature 100.8°, pulse 140, respiration 32. Pulse increased to 160 at 4:50 a. m., remaining so for several hours. Complained at 9:30 a. m. sharp, shooting pains around the heart. Dr. Frank Adams, who was called in consultation, as the membrane had not shown any signs of disappearing, advised us to continue the antitoxin, but at shorter intervals, and also to crowd the whisky. Abdominal wound showed signs of infection. Five thousand units given every three hours; total, 10,000 for the day. May 27, 5,000 units every three hours; total, 30,000. May 28, 35,000 units given. Abdominal wound opened up; discharged one-half cup of pus. Infection proved to be only in the wall.

May 29, 40,000 units. Temperature 99.2° to 99.8°. Pulse ranging between 124 and 128. Respiration 20, but membrane showing no signs of coming off.

May 30, 30,000 units given. Temperature 99° to 100.4°. Pulse 132. Respiration 22 to 24.

May 31, 31,000 units given. Temperature 99.5° to 100.8°. Pulse 122 to 126. Respiration 20.

June 1, 55,000 units given. Temperature rose to 101.7. Pulse 140. Respiration 32.

June 2, 80,000 units given. Temperature, highest, 101.3°. Pulse 140. Delirious.

June 3, 40,000 units. Highest temperature 105°, lowest 98.6°. Highest pulse 160, lowest 132.

June 4, 35,000 units. Highest temperature 101.3°, lowest 98.8°. Highest pulse 148, lowest 130.

June 5, 40,000 units. Highest temperature 103.4°, lowest 100.4°. Highest pulse 160, lowest 140. At 6:30 a. m. had decided chill.

June 6, 55,000 units. Highest temperature 103.1°, lowest 101°. Highest pulse 176, lowest 140. Dr. Crosby saw her at this time and advised that antitoxin be discontinued for a while to see if we were having any trouble from serum poisoning. Pelvis at this time was found to be absolutely clear. The alcohol and digalen were also discontinued.

June 7, 30,000 units. Highest temperature 103.2°, lowest 102.2°. Highest pulse 188, lowest 144.

June 8, no serum. Highest temperature 105.1°, lowest 102.6°. Highest pulse 168, lowest 148. Throat somewhat better.

June 9, highest temperature 104°, lowest 101.6°. Highest pulse 180, lowest 140.

June 10, Dr. Frank Adams, Dr. L. P. Adams, Dr. Crosby, Dr. Krone and myself saw her with Dr. Reynolds. Highest temperature 103°, lowest 101.2°. Highest pulse 170, lowest 140.

From the consultation there appeared to be beginning trouble in the pelvis somewhat above the right broad ligament, yet not clearly defined. The throat was clear at the time, having been so since the 8th, the first time that it had remained clear for more than two hours.

The patient has made a slow convalescence and is now practically well. Other than a slight scarlet

fever like rash appearing two days after the serum was discontinued, no deleterious symptoms were noticed from the large dose. The nurses reported that after every dose of antitoxin the heart was decidedly stimulated. Dr. Reynolds, who had charge of the diphtheria end of the case, and myself, take this occasion to thank Drs. Adams, Moore and Krone for their gratuitous services, as the patient certainly owes part of her life to their advice, and also to the Cutter Laboratory, who furnished all the serum, letting Dr. Reynolds use all he thought necessary even if they were not paid at all.

The largest record dose of antitoxin I am able to obtain is 280,000 or 287,000 units, which the Cutter people say a patient in one of the eastern cities received.

Mrs. R. received 555,000 units of diphtheria antitoxin.

W. LEWIS EMERSON,
Secretary.

PUBLICATIONS

An Aid to Materia Medica. By Robert H. M. Dabarn, M. D., Professor of Surgery and of Surgical Anatomy, New York Polyclinic Medical School; Professor of Surgery, Fordham Medical College, New York; Visiting Surgeon to the City Hospital, New York. Fourth Edition, Revised and Enlarged. By Eden V. Delphey, M. D. The Macmillan Company, New York, 1908.

So well known is the excellence of the previous reprints of this book that the present edition calls for little comment by the reviewer. The changes in the Pharmacopeia of the Eighth Decennial Revision have made necessary greater or less changes in the text, but as formerly the aim has been to present in brief space and tabular form all the drugs and preparations recognized by the Pharmacopeia, with their doses, composition, strength, synonyms, pronunciation, and in the case of drugs of vegetable origin the derivation and habitat. Other helpful features found in the previous editions, such as rules for the dosage of medicines in childhood, the chapter on prescription writing, dangerous abbreviations in prescription writing, the article on incompatibility, etc., have been retained.

For students, the volume will doubtless prove useful since examiners require much that the practitioner soon lays aside; for graduates it may serve as a ready reference book. Whilst our present conditions certainly create a want for works of this character the reviewer feels with Dr. Delphey, who has assumed the responsibilities of the present revision that "it would be the part of wisdom for physicians to drop many (drugs) which they are now using, to get thoroughly acquainted with a few drugs and not change to a new or much lauded drug until he finds an indication which the old fails to meet."

A. J. L.

Neurographs. A Series of Neurological Studies, Cases, and Notes. Editor, William Browning, Ph. B., M. D., Vol. I, No. 2.

We called attention to the first number of this publication at the time of its appearance in a note which was unfortunately so marred by misprints that whatever notice it may have obtained was very likely bestowed rather on those errors in the printing than on the enterprise on which it was our intention to animadvert. We therefore believe that we are doing no more than our duty in again seeking to call attention to Neurographs, now that a second number has been issued.

This number is devoted wholly to Huntington's career and Huntington's Chorea. Huntington's Chorea, it will be remembered, was first described from cases occurring in Long Island, and Long

Island is the home of Neurographs. The number before us is adorned with portraits of Dr. Huntington, contains a number of articles on the history of Huntington's Chorea, one of them by Professor Osler, an article on the disease in German by Professor V. Strumpell and one in French by Lannois and Paviot, together with much other material bearing on the subject, and concludes with a valuable biography. This issue of Neurographs refreshes by its exhibition of scientific enthusiasm and excites sympathy for its healthy local pride.

L. N.

A CRITICISM OF VALUE (?).

The following communication has been received for publication and is here given exactly as received for the reason that it shows so clearly the chaotic cerebrations of the majority of the "kickers." It seems unnecessary to comment on the originality displayed in spelling, grammar, etc.:

Los Angeles Cal. June 12 1908.
California State Medical Journal
San Francisco
Cal.

Is the California State Medical Law Unjust?

Every question is debatable from two sides and every law is considered from two view points; so therefore it depends materially upon which side we may happen to be looking, whether we can see with clear vision or not.

I am trying to look at the State law in reference to Medical applicants for licenses as a once time outsider; (i. e.) outside of the pale of the sanctum sanctorum of the Medical laws or fraternity of the State of California, but now able to look over the fence from the inside.

To begin with, I am not one who do not believe in State laws, for I do but that those laws be just laws, laws that do not work a hardship upon any honorable man in the profession; in fact I am a believer in a National Board of Examiners, & believe it to be consistent for a man who is competent of practicing in one state to be equally competent to do so in another, having faith in the profession, I believe the day is not far distant when we will have a National board, or its equivalent in a reciprocity law, wherein a licensiate by examination will be registered in any state in the union, but until that time & while the California State Board continues its policy of closed doors against competent men, I believe they should modify the law in one respect at least and that is in regards to the necessary requirements for a certificate.

So far as the School requirements are concerned, I believe in keeping the standard here as high as anywhere, but the clause that says, first that a general average of 75% must be made & that for longevity applicants there will be granted five % on there general average for the first & every ten years of active practice thereafter & then deliberately making this clause retroactive or invalid by a following clause stating that the applicant must make not less than 60% in any one branch or subject & if he does so shall fail, I contend is unfair.

Some men who have practiced 10—20— or even 35 years, who have a credit from active practice of from 5 to 15 % no matter whether they make the required 75 % and fall below 60% in any one branch must needs be re-examined & pay another fee. Of course the majority of men formulating the State laws are men who have never had to take state board examinations, & possibly would not be as competent, as many a man whom their law turns down, and it is all well & good for them to say we must uphold the law & so say I. But eliminate that clause & give them a fair deal, for it would be comparatively easy for men long in the practice of medicine, to pass the state board of examination if they were granted 5 to 15 % as the case may be & it

were applied to there general average, but it is almost impossible for many to do so, if the requirements of 60 % in each branch is insisted upon.

DR. H. G. M.

TO THE MEMBERS OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.

The following appeal, issued by the Journal of the South Carolina Association, is sound. Will the members of our California Society follow the excellent suggestion?

To the Owners of this Journal, the Members of the South Carolina Medical Association:

You know that reciprocity encourages business, don't you? Outside of common decency, and leaving aside mere etiquette, it's good business to stick to your friends, isn't it? Now, who is your friend—the smooth-tongued spiel-artist who swears undying love and admiration for you as long as he is in your hearing, and laughs behind your back at your ease gullibility and willingness to do business with him at an expense to himself of nothing more than a few lungfuls of hot air? Or is your friend the fellow who thinks enough of you to support your efforts for betterment and puts up his fair share of cash for the promotion of straightforward business intercourse with you and for the stimulation of legitimate professional business and its accompanying trade?

The last, you say? Certainly. There are no hopeless idiots among the owners of this Journal.

All right; so far, so good. But what are you doing for your friends who are helping you in your work? And what will you do for the pretenders who are "working" you for their own help?

Read the following colloquy, which actually occurred very recently in our hearing:

Affable Salesman, entering Doctor's office: "Doctor, I am representing the Blank and Blank Laboratories, of Analaska, and I have a very elegant preparation, of which I am going to leave you samples, of the best, positively the very best, most scientific mixture of laxative salts ever offered to your discriminating profession. This is—"

Doctor, interrupting: "Does your firm advertise in the Journal of our State Medical Association?"

Salesman, with feigned pained surprise: "Er—no. Why do you ask?"

Doctor, cheerfully: "Oh, because there's really no reason why we doctors should support a firm that is not willing and ready to support us in our efforts to better existing conditions."

Salesman, affecting indignation: "Do you mean to tell me, sir, that simply because a firm does not advertise in your Journal, you refuse to consider or test its products, no matter how superior they may be—no matter how many lives they may save?"

Doctor, sweetly: "My dear man, how many firms in this country put out the best product on the market? And how many of them come in here to tell me all about it? Do you suppose for a minute that I, or any other doctor, have time to try them all on their merits? Do you now, eh?"

Salesman, unwillingly: "Well, no, I don't suppose you have."

Doctor: "Very good. Then isn't it reasonable and proper that what testing and patronage we have to place should favor first the firms that maintain close business relations with us—our business friends?"

Salesman: "Yes, I guess that's true. I am going to take this matter up with the house. What's the Journal's business address?"

Now, the point is that the Journal needs the support of good ethical advertisers, and if every doctor who is part owner of the Journal will pursue the above line of thought, speech and action the effect would be magical. As long as these houses think

they can work us without advertising, they will hold back. It is up to us, every one of us, to treat them as if they were from Missouri, and show them! By doing this we are at the same time giving loyal support to those houses that are represented in our pages, which is only decent and proper. They are the ones to whom we should always give preference, and we again urge all of our joint owners to follow up this principle and always to insist distinctly when buying supplies that you wish and will have our advertisers' products—there are none better.

We have a most wonderful and estimable concord of thought in the profession of our State. What remains to be acquired is unity of action. Are there brains and energy enough in our membership to accomplish it? We think so.

This is practical, hard-sense talk, and we appeal to every individual member for active, intelligent co-operation.

Faithfully,
YOUR JOURNAL.

THE SAMUEL D. GROSS PRIZE—FIFTEEN HUNDRED DOLLARS.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page, it shall be stated that to the essay was awarded the Samuel D. Gross prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 S. 13th St., Philadelphia," on or before January 1, 1910.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

WILLIAM J. TAYLOR, M. D.
RICHARD H. HARTE, M. D.,
DE FOREST WILLARD, M. D.,

Philadelphia, June 15th, 1908. Trustees.

THE FIRE INSURANCE COMPANIES AND THE SAN FRANCISCO FIRE.

A statement endorsed by the San Francisco County Medical Society.

We, as physicians of San Francisco and members of the San Francisco County Medical Society, wish to express our gratitude to those fire insurance companies that quickly adjusted their losses after the great fire and conveyed prompt relief to those who trusted them.

It is now more than two years since that greatest of all fires, and we feel that time enough has elapsed to permit a just view of the situation. The professional classes, such as lawyers, doctors and dentists, were particularly hard hit, as their offices were in the heart of the city. During those awful days no

conveyances could be obtained and instruments, furniture and libraries, the patient collection of many years, were swept away in a few hours. In many instances no insurance at all was carried, and in many others the insurance companies were unsound or unfair. We all, however, profited, if not directly, yet indirectly, by those companies that met their obligations. The effect of their good work is lasting even now, and is enabling San Francisco to stand the present financial stringency better than almost any city in the union. We, as physicians, are profiting in the general well-being of the people.

We feel also that in making out a list we should be liberal in our construction. Any company that paid within ten per cent of the full value of its policies should be reckoned as good. We must not forget that the insurance companies also suffered, and that it was a sore trial to them to pay out suddenly the vast sums required. That so many insurance companies took their punishment so well is one of the marvels of modern finance, and that so many American companies did well is just cause for pride. And we may here express our appreciation of the gallant way our local companies met their losses. At the time of the fire there were two local companies doing business in San Francisco and their stock was mostly owned within the city. These stockholders lost not alone through their fire insurance stock, but shared with others in the general calamity. The California Fire Insurance Company paid its obligations in full as soon as the losses could be determined. The other company, the Fireman's Fund, lost very heavily, and to add to their trouble, through an accident their vaults did not hold, and consequently all their books were burned, thereby destroying evidence of either debits or credits. They, however, reincorporated, found what they owed and paid in cash, at first fifty per cent of their losses, then an additional six per cent, and gave stock for the rest. They are doing an excellent business, their stock is rated as excellent, and they have already paid a further dividend of five per cent. It is said by competent authority that those who insured with the Fireman's Fund have already received over eighty per cent of the face value of their policies, and they undoubtedly will ultimately be paid in full. This is the first time in the history of fire insurance when the local companies have not failed, and shows, as nothing else could, the ability of the business man of San Francisco to take punishment. We understand the Fireman's Fund made an excellent record in the great Chicago fire. It is an interesting thing to see the same determining principles coming down through long years in an aggregation of human beings—the personnel changes, but the spirit does not.

We hope this list may prove useful to our fellow physicians in other cities. Any city may be visited by a conflagration, and it is well to know those companies which are so amenable to public opinion as to pay their losses. Public opinion is the only force that can be relied on to compel any of them to meet their obligations, for, in the courts, they can so worry and delay you, no matter how good your case, as to make, even if fortunate enough to win, your victory a barren one. Their policies also are so worded as to enable them to contest any claim. This ingenious wording of the policies is a matter of self protection, as it is often so difficult to prove arson. If, therefore, a company feels certain arson has been committed, yet cannot prove it, they contest the payment on some other ground. In insuring, therefore, it is absolutely futile to look at the terms of the policy, as they, like those of a note one signs in borrowing money from a bank, are all formally set down. As a matter of fact, one subscribes to the conditions of such a note, knowing very well that the harsh rules will not be enforced except in case of trying to evade meeting the debt.

Many insurance companies have on their policies a notice in prominent type, "Read your policy." Do not read your policy, for if you should hand it for minute examination to half a dozen lawyers versed in insurance law they would give you just six different opinions. On the contrary, therefore, do not read your policy, but read this list. This list, which has been carefully revised from a list published in the California State Journal of Medicine of August, 1906, and according to the excellent lists given in the report of the San Francisco Chamber of Commerce and in Best's Special Report upon the San Francisco Losses and Settlements, should be kept for reference. The names of the different insurance companies are in many instances so similar, and there are so many of them that it is impossible to bear them in mind.

Aetna of Hartford.
 American of Newark, N. J.
 American Central of St. Louis.
 Alliance of Philadelphia.
 Atlas of London.
 Agricultural, Watertown, N. J.
 British America, Toronto, Canada.
 British American, New York.
 California of San Francisco.
 Continental of New York.
 Connecticut of Hartford.
 Citizens of St. Louis.
 Fireman's Fund Insurance Corporation, San Francisco.
 German-American of New York (policy contained earthquake clause, which was not taken advantage of).
 German-Alliance of New York (policy contained earthquake clause, which was not taken advantage of).
 Glens Falls of New York.
 Hartford Fire of Hartford, Conn.
 Home of New York.
 Insurance Company of North America, Philadelphia, Pa.
 Liverpool and London and Globe.
 London Assurance Corporation of London, Eng.
 Law Union & Crown of London.
 Mercantile Fire & Marine of Boston.
 Michigan Fire & Marine of Detroit, Mich.
 New York Underwriters' Agency, New York, N. Y.
 New Hampshire of Manchester, N. H. (policy contained earthquake clause, which was not taken advantage of).
 New Zealand of New Zealand.
 Niagara of New York.
 North British & Mercantile of London, Eng.
 Northern Assurance Company, London, Eng.
 Northwestern National of Milwaukee.
 Phoenix, Hartford, Conn. (claims settled without reference to an earthquake clause its policy contained).
 Providence-Washington of Providence, R. I.
 Phoenix Assurance, London, Eng.
 Pelican Assurance of New York.
 Pennsylvania Fire of Philadelphia, Pa.
 Queen Insurance Co., of America, New York.
 Royal Insurance Co., Liverpool, Eng.
 Scottish Union & National of Edinburgh, Scotland.
 Springfield Fire & Marine of Massachusetts.
 St. Paul Fire & Marine of St. Paul, Minn.
 Sun Insurance Office, London, Eng.
 Security Insurance Co., New Haven, Conn.
 State Fire, Liverpool, Eng.
 Teutonia, New Orleans, La.
 Union Assurance Society, London, Eng.
 Washington Fire, Seattle, Wash.
 Westchester, New York, N. Y.
 Western Assurance, Toronto, Canada.

REASONABLE REQUEST FROM A PHARMACIST.

Dr. ———

Dear Sir: As your Medical Journals are at present leading in a fight for standard ethical preparations as against nostrums, perhaps you will kindly forgive me for assisting in a good work.

A few days ago I had one of your prescriptions for Papine, Battle & Co. Now these advertising fakirs claim that their preparation contains all of the good elements of opium with the bad ones left out, and their dose is one teaspoonful.

Our tincture of opium deodorated of the pharmacopeia is an extract of opium containing morphine, codeine and narceine, with the obnoxious alkaloids thebaine, papaverine and narcotine eliminated. To make a preparation from this containing an equivalent of one grain of opium to a teaspoonful would take say

Tr opi deodor M X
Elix Simplicis ad zi

and this would be exactly equal to the advertised papine in every respect.

So far papine is possibly a good preparation, but look at the sequel. Papine costs 71 cents per 8 ounce bottle, or per pint \$1.42. Any druggist can make up the other for per pint 45 cents, or a difference in favor of the druggist in Los Angeles against the advertiser in St. Louis of about \$1, or in other words he gets over three times what the goods are worth.

The doctor is a busy man and the quack agents are glib tongued, and it seems so much easier to write one word than perhaps half a dozen; but ask yourself, is it right to turn a druggist into a mere dumper of ready-made nostrums from one bottle to another?

Some of their preparations undoubtedly are good, but one remark will apply to all: they are extravagantly priced and in about all cases the druggist has the remedies on his shelves ready for mixing according to the doctor's orders, if he but take the time and trouble to say what he requires.

Of course, I keep papine and other things like it in stock, and always dispense it when prescribed, but it is needless to say I would rather not.

With best regards and wishes and apologies for tiring you out, I am,

Yours very respectfully,
(Sig.) ROBERT FULTON.

COUNCIL ON PHARMACY AND CHEMISTRY, ADDITIONS TO NEW AND NON-OFFICIAL REMEDIES.

The following articles have been added to the list of new and non-official remedies approved by the Council on Pharmacy and Chemistry, which was published in the Journal August 1:

Beta-Eucaine Lactate (Schering & Glatz).
Capsules Glycerophosphates Comp. (Mulford Co.).
Iodalbum (Parke, Davis & Co.).
Iodalbum Capsules (Parke, Davis & Co.).

ERRATUM.

To the Editor of the State Journal:

In the August number, on page 269, I am quoted as saying "that operations done **without** a general anesthetic." I did say "operations done **under** a general anesthetic." Kindly make the correction and oblige.

Respectfully yours,

KASPAR PISCHEL.

CHANGES OF ADDRESS.

CHANGE OF ADDRESS, TO AUGUST 15, 1908, noted since the Register and Directory went to press.

C. E. Turner, from Vallejo, Cal., to Big Pine, Cal.
A. H. White, from Crockett, Cal., to 2667 Mission st., San Francisco.

Alfred W. Perry, from 1914 Sutter, to 1151 Polk st., San Francisco.

Maria Congdon, from 315 Pico st., Los Angeles, Cal., to 1153 So. Grand ave., Los Angeles.

Edward Selzer, from 542 Kearny st., to 115 W. Santa Clara st., San Jose, Cal.

Verlin C. Thomas, from 1871 Sutter, to Westbank Bldg., San Francisco.

P. L. Rookledge, from San Luis Obispo, Cal., to Cambria, Cal.

Adelaide Brown, from 3146 Clay st., to 2520 Sacramento st., San Francisco.

Guy C. Reilly, from Grant Bldg., Los Angeles, to Broadway Central Bldg., Los Angeles, Cal.

Barton Dozier, from Grant Bldg., Los Angeles, to 952 Bonnie Brae, Los Angeles, Cal.

C. V. Fisher, from Antioch, Cal., to Klamath Falls, Ore.

C. S. G. Nagel, from S. W. cor. Sutter and Polk sts., to Hastings Bldg., 162 Post st., San Francisco.

Henry D'Arcy Power, from 1065 Sutter st., to Butler Bldg., 135 Stockton st.

Annie W. Nixon, from 936 Grattan st., Los Angeles, to 1624 Shatto st., Los Angeles, Cal.

Ross A. Harris, from Merchants' Trust Bldg., Los Angeles, to 301 Broadway Central Bldg., Los Angeles.

Rilla G. Hay, from 111 Potomac Bldg., Los Angeles, to 3906 Sunset Block, Los Angeles, Cal.

Pat S. Dougherty, from 217 So. Broadway, Los Angeles, to 318 Wright & Callender Bldg., Los Angeles.

C. W. Anderson, from H. W. Hellman Bldg., to 226 Bradbury Bldg., Los Angeles.

Harris Garcelon, from Douglas Bldg., Los Angeles, to 612 Pacific Electric Bldg., Los Angeles.

Phillip August Bill, from Delbert Blk., to 585 California st., San Francisco.

Seymour Ball, from Long Beach, Cal., to Elsinore, Cal.

Wm. Banks, from Stirling City, Cal., to 1498 9th ave., San Francisco.

W. M. Wightman, from Angel Island, Cal., to Callao, Peru.

Alfred L. Draper, from 2400 Pacific ave., to 2502 Washington st., San Francisco.

A. R. Fritsch, from 1458 Sutter st., to Butler Bldg., San Francisco.

H. B. A. Kugeler, from 2510 Washington, to 2224 Baker st., San Francisco.

D. D. Lustig, from 2502 Washington st., to 146 Grant ave., San Francisco.

Walton Preston, from 1823 Fillmore st., to 906 Hayes st., San Francisco.

Rufus L. Rigdon, from 2101 Webster st., to Chronicle Bldg., San Francisco.

Adolph B. Baer, from 3590 Sacramento st., to N. W. cor. Polk and Sutter sts., San Francisco.

Deaths.

Santa Cruz Co.—James F. Christal.

Los Angeles Co.—Roy F. Clark.

Humboldt Co.—Wm. M. Michael.

San Francisco Co.—Alfred McLaughlin.

Sonoma Co.—Samuel S. Boyle.

LICENSES REVOKED.

At the last meeting of the State Board of Medical Examiners, the licenses of B. B. Lee and J. C. Anthony, to practice medicine in California, were revoked.